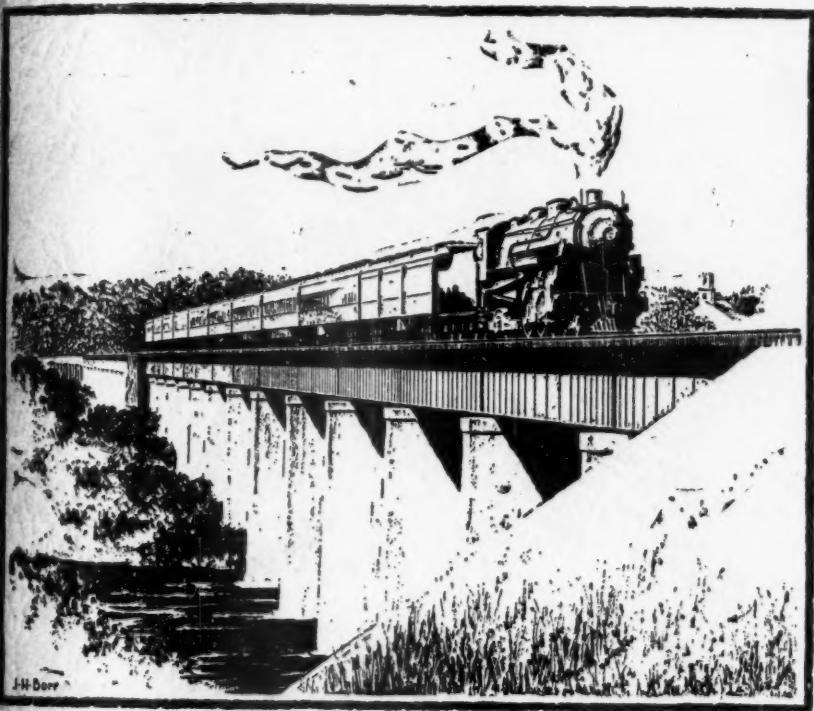
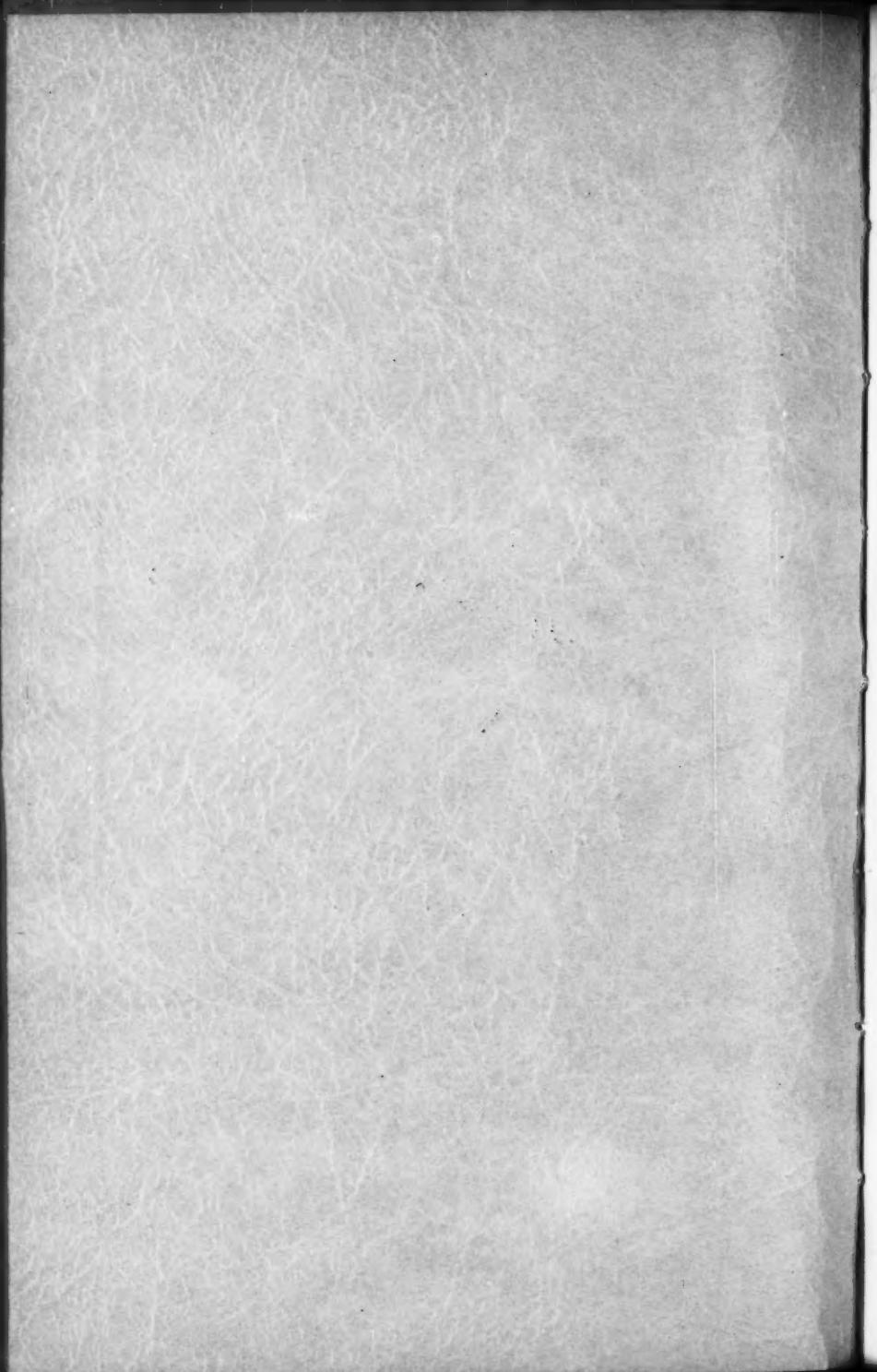


B U L L E T I N

No. 56



THE RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY
TRANSPORTATION LIBRARY



BULLETIN No. 56

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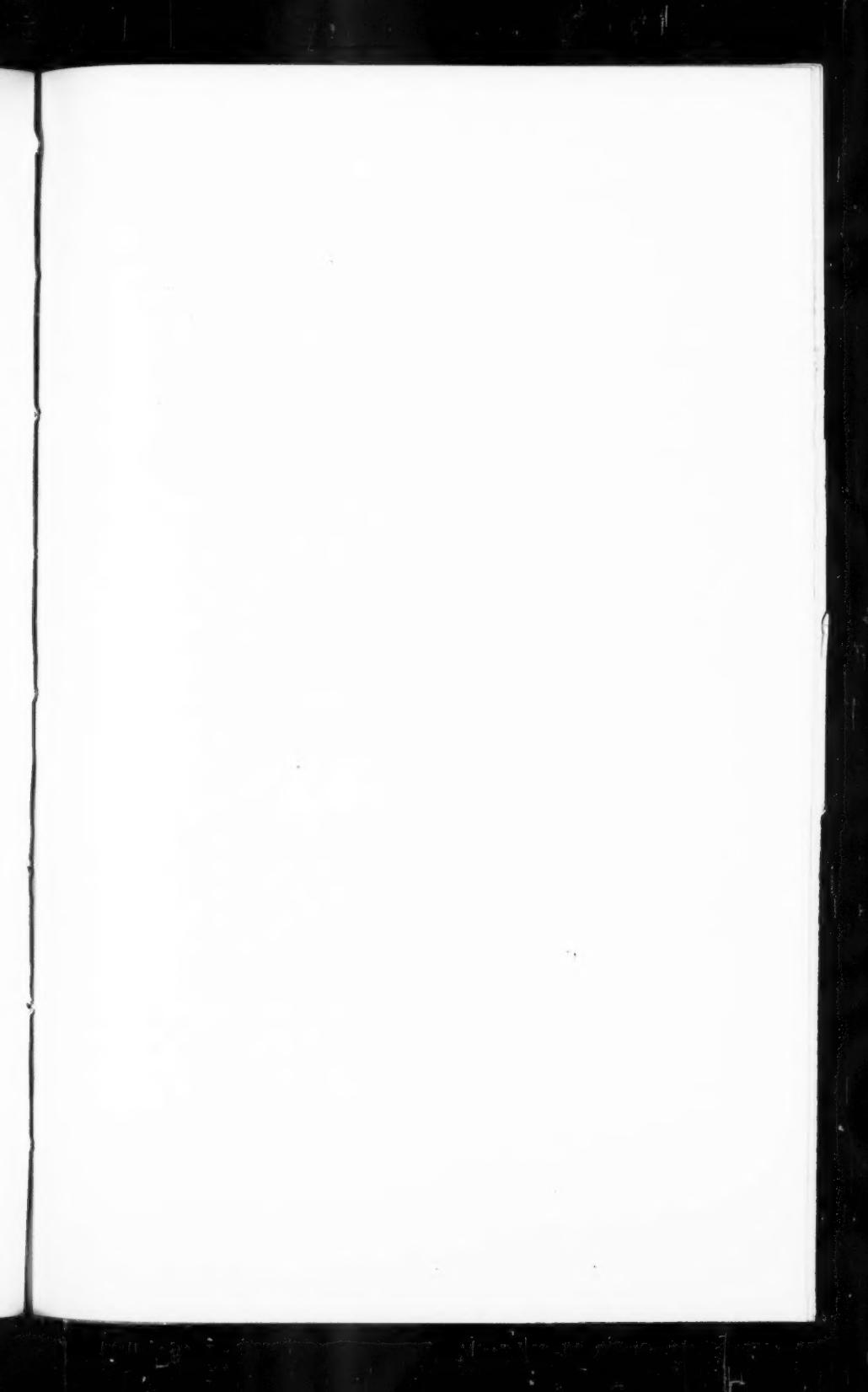
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Portrait of Henry Farnam, President and Chief Engineer
of the Railroad Bridge Co., chartered in 1853.

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As time passes discoveries are made that give additional or new information on our early railroads and locomotives. One of the earliest locomotive lists published in this country was the roster of 1838 prepared by our Treasury Department and published in our Bulletin #6. In the year of 1856, the State of New York required all of the railroads of that state to file with them details relative to their locomotives. Practically all of the railroads complied with complete data and this was included in the Report of the Railroad Commissioners for that year. Canada appears to have been moved by a similar thought and appointed their Inspector of Railways, Samuel Keefer, Esq. to furnish the Board of Railway Commissioners with certain data for the years 1859 and 1860. Our Canadian Representative has availed himself of the use of this report and in the article bearing his name will be found the data of the Keefer Report together with such corrections that we know to be true. The publication of this document is a welcome addition to those that we have already published and we hope it will be of great interest to all of our members.

From the same country we publish the account of the Toronto, Hamilton & Buffalo Ry. Jointly owned by both American and Canadian railroads, this little line has had an interesting history. Mr. Maus has made an interesting presentation and we welcome him to our columns. Another newcomer is Mr. Frank F. Fowle. Although a Civil Engineer by profession he has made a great study of bridges and we are glad to present herewith his paper on the Original Rock Island Bridge, read before the Rock Island Rotary Club. Mr. Withington, our Vice President, favors us with a paper on the six early railroads of New Haven, Connecticut and the final installment of the Maine Central R. R. Locomotives appears in this bulletin. With the exception of the Central Vermont Ry., we have published locomotive rosters of all of our larger New England roads. The practice of publishing them in sections will be abandoned as it makes too much confusion. In the near future we plan a special Central Vermont bulletin and the locomotive roster will be included in that publication.

Bulletin No. 57

This bulletin, entitled—"The Two Footers" will appear in February, 1942. It will contain brief accounts of the most notable and important two foot gauge roads in the country. These will include the Sandy River & Rangeley Lakes; the Bridgton & Harrison; the Monson; the Wiscasset, Waterville & Farmington, all in the State of Maine; the Mount Gretna Narrow Gauge; the Laurel River & Hot Springs, together with some others. Just now the history of our narrow gauge lines is of more than passing interest and we believe the inclusion of all of the more important two foot gauge lines in one publication will be of great interest and value. Certainly these little roads made interesting history. This is a special bulletin and will not be sent you unless you include it with your check for your 1942 dues. The two bulletins our Annual Members will receive for 1942 will be Nos. 58 and 59.

Membership Dues

As announced in our Annual Report published last February, the Directors requested our members to express their opinions in the matter of an increase in dues for the Annual Members. Many of you took the trouble to express your opinions to Mr. Walker and to each and all we wish to thank you for your courteously expressed opinions. These replies have served to guide the Directors and the Editor both in the matter of the bulletin and the Society.

From the replies, it would seem that our little publication is keenly appreciated and valued. We hope it will always be that way. In the matter of increasing the dues, the replies indicated that the majority were for this increase, others were not and had good reasons for their

statements. All of these replies and the matter were carefully considered by your Directors at their meeting on June 8th last.

Today we are living in rather uncertain times and it is impossible to look a great distance ahead. The tremendous amount of war work we are now engaged in will have to be paid for in the shape of higher taxes. There will probably be a rise in the cost of living and all of this means that practically all of us will have less money to spend on some things we would like to have. Probably this weighed uppermost in the minds of your Directors and for that reason it was decided to allow the dues of our Annual Members to remain at \$3.00 per annum. Dues of the Contributing Members were reduced to \$10.00 per annum and Life Members, effective Jan. 1, 1942 may pay the life membership fee in not more than two equal installments in two years.

This means that the Annual Members will still receive the two bulletins containing the miscellaneous articles in connection with their membership. The other two bulletins issued during the year, one extra and one special, they can purchase or not, just as they choose. The Contributing Membership, as the name implies, is a contribution to the Society. This membership will receive all of our publications during the year but the payments of a Contributing Membership cannot be credited to a Life Membership. The Life Member receives all of our publications for the duration of the life of the member.

The Directors recognized the need of a certain amount of elasticity in the matter of the publications to the Annual Members. It is perfectly possible that the subjects treated in our special or extra bulletins might be of little interest to them, though they would be of intense interest to our members who are either residents near or interested in the subject in question. This works to your advantage in that these bulletins are optional.

In return for this, you, as an Annual Member can help in two ways. The first is in the matter of payments of dues. In the past, two and three notices have been sent to the delinquents. Then the delinquency is referred to your local Representative or Chapter. Next year, only one notice will be sent you and we will appreciate your prompt payment of your dues. Failing in that, on Feb. 1st, your name will be reported as delinquent to your local Representative or Chapter and if nothing is heard from you by the end of March, your name will be automatically dropped from the membership rolls. Thus, you have three months, one fourth of the year, to get your dues into our hands and it does not seem too much to be asking that of anyone.

The second is in the matter of back publications. Our bulletins are not like current fiction—out of date upon the appearance of the next issue. The history they contain is just as true today as when it was written, perhaps ten years ago. Many of our members supplement their files each year by the purchase of a certain number of back bulletins. To these members we commend their wisdom and extend our thanks for their interest. It seems rather strange that of the forty odd bulletins still in print that there is not something in one or two of them that will strike the responsive chord and warrant your purchasing that partic-

ular item. The experience of your Editor has been that you wait until the bulletin is reported out of print and then you bring down your wrath on his head for being unable to furnish you with a copy. When a bulletin is out of print, we have no way of supplying you with a copy until some are turned back to us and then you must wait your turn until those ahead of you have been supplied. This means that it might pay you to scan the list of contents of our back bulletins as found published in our Annual Report for something that might be of interest to you. There is a wealth of material in them, material just as good now as when it was published and in purchasing them, you would not only be favoring yourself but the Society as well.

Under these circumstances, your Directors deemed it best not to raise the dues of the Annual Members. The day may come when it will be necessary but the present time does not seem right. Your replies contained many helpful suggestions, they have been appreciated and we wish to thank you all for taking the trouble of writing and expressing your opinions.

Conditions at the Baker Library

During the past summer, youths nattily attired in the uniform of the Naval Reserve have been a common sight on the campus of the Harvard Business School. The big reading room of the Library has been divided into four class rooms for their use.

With the coming of fall and the start of regular school work, conditions promise to be a bit cramped. Dean Donham has asked and received permission to use our exhibition room as a small class or conference room, which can be done without disturbing our exhibit. If this is done, it simply means that while this room is being used as a class room, our members and their guests must be excluded for the purpose of inspecting our exhibition. In the face of the present emergency, this is little enough to ask of any one.

Just what the hours for the classes will be or even if the room will be used, we are unable to state at the present writing. Rather than announce the closing of the exhibit, we are simply calling your attention to a possibility, suggesting that if it is your intention or that of your friends of visiting our exhibit that you first get in touch with the library authorities and thus save you time in waiting or, perhaps a useless trip to Cambridge.

The Canadian Railroad Historical Association

In 1932 many of our Canadian members and their friends started the above Society, attempting to do in Canada what this Society has tried to accomplish in this country. The anniversary of the Champlain & St. Lawrence R. R. in the summer of 1936 gave a further impetus to this group. Your Editor recalls with distinct pleasure the week end

spent in Montreal of that summer and the meeting of many members of the Canadian Society. Although this group is not large numerically, they issue a mimeographed bulletin devoted to Canadian Railroad History and to the affairs of the Society, prior to hostilities on the other side, they engaged in one day excursions and trips to points of interest and they have been constantly alert to add to their museum material and in this they have frequently had the interests of this Society in mind.

In 1939 a Toronto Chapter of the above Society was formed by a group of men who had been meeting informally and in 1940 they were officially recognized by the parent Society in Canada, the purpose of the Toronto Chapter being identical with that of the Canadian Railroad Historical Association. The President of the Toronto Chapter, Mr. Albert Stephen Olver, is at present in active service as a Lieutenant in the Royal Canadian Ordnance Corps and Chapter activities are guided by John William Griffin, Vice President. The President of the parent society is Mr. C. L. Terroux.

To this Society and its chapter, just across our border, we cordially express our greetings and wish them the best of luck in their efforts.

New Haven and Its Six Railroads

BY SIDNEY WITHERINGTON

It is just over a century ago that the first railroad was operated out of New Haven. On December 14, 1839, took place the first complete trip of a railroad train between New Haven and Hartford over Connecticut's first own railroad. Two years before, to be sure, the railroad was opened between Providence and Stonington, but only seven miles of that route were within the state. Connecticut was somewhat behind other states in early railroad development, partly perhaps on account of the well-known conservatism of its citizens, and partly because of relatively effective means of transport afforded by its rivers, and by Long Island Sound, and by its rather highly developed system of privately-owned turnpikes or toll roads.

In 1821 President Timothy Dwight, in his famous memoirs, reported that the "great road from Georgia to Maine [present "Route 1"?] enters New Haven from New York" and that "six turnpike roads commence here." Before railroads came, a passenger might travel by coach between New York and Boston in forty-one hours, if he was willing to travel continuously day and night. Most travelers preferred, however, to rest at night at a tavern, which increased the time in transit to perhaps four days. By the joint use of a steamboat from New York to Providence, and a coach from Providence to Boston, travelers accomplished by this route the journey between New York and Boston in twenty-three hours. Twenty to twenty-five coaches per day "rattled between Providence and Boston (44 miles) in four hours and fifty minutes" said a contemporary, who added "If anyone wants to go faster, he may send to Kentucky and charter a streak of lightning!"

Steamboat lines along the sound were numerous in the 'thirties, carrying both passengers and freight between Connecticut points and to New York. Steamboat schedules were often correlated with those of stage coaches. A popular method of travel to New York from New Haven was by coach to South Norwalk and thence by steamer. Bridgeport was also a point of transfer for land and water travel.

Some of the schedules of the time may be of interest. The Connecticut Herald, February 1829, ran advertisements on coaches "Daily leaving New York (Sunday excepted) 8.00 AM, Passengers on this line will dine at Mr. Cook's, Norwalk, and sup at New Haven; from New Haven, will breakfast at Mr. Bassett's, Bridgeport, and dine at Mr. Street's, Mamaroneck", presumably reaching New York at bed-time.

In 1837 a line of stages was advertised to leave the Hotel Bishop, New Haven, at 5.00 AM, connecting with steamboats at Bridgeport for New York, arriving at 2.00 PM. Another combination left the Tontine Hotel, New Haven, 6.30 AM by Dispatch coaches via Norwalk, leaving Norwalk at 12.00 Noon by the Steamer "Citizen", arriving the same afternoon. It was advertised that "coaches call for and leave passengers at their places of residence in New Haven."

In 1840 the "Union" line of stages was advertised to leave New Haven at 3.00 AM, due in New York 11.00 AM. This perhaps was the precursor of the now well-known "Bankers Express". People were not afraid of getting up early in those days. Also advertised were coaches leaving New Haven at 5.00 AM, arriving New York 1.00 PM, or leaving at 8.00 AM, arriving at 4.00 PM, changing to steamers at Bridgeport.

After the introduction of railroads, travel was very much speeded up. The 1851 timetable of the N. Y. & N. H. R. R. gives running time for local trains between New Haven and 32nd Street, where horses were applied, as 3 hours. The *Scientific American* of 1848 reported normal speeds of 50 m.p.h. on American Railroads, and 60 m.p.h. in "special cases." A train was reported May 20, 1848 as leaving New Haven 2.15 PM and traveling to Boston in 3½ hours, though this was perhaps exceptionally fast for the time.

The early railroad charters were, in general, uniform in their provisions, though neither the officers of the corporations nor the members of the legislature were apparently entirely clear in their minds as to just what form the operations of the railroads would finally take. The turnpikes and canals were well known as transportation agencies, and there was evidently a thought that the railroads might be operated on a somewhat similar basis, the *Rail Road* Company providing the track, and individuals furnishing their own rolling stock and motive power and paying toll.

The directors of the first *Rail Road* were thus by the terms of their charters usually "authorized to erect toll houses, establish gates, appoint toll gatherers and demand toll upon the road . . ." and "the transportation of persons and property, the construction of wheels, the form of ears and carriages, the weight of load and all other matters . . ." were to be under their jurisdiction. It was stipulated that the railroad might "be used by any person who shall comply with the rules and regulations." It was also provided in most instances that the legislature might "authorize any company to enter the railroad with another railroad at any point . . . paying for the right of using the same, such a rate as the legislature may from time to time prescribe." These provisions all followed the turnpike charters.

Each railroad was placed under the jurisdiction of three commissioners who were appointed by the State, but whose salaries were to be paid by the railroad. They were to oversee, and their duty it was to fix proper value upon land which might be condemned for right-of-way in cases where outright purchase prices could not be agreed upon between the railroad and the land owner. The three commissioners also were charged with the duty of making return to the Secretary of State of the complete accounting of all expenses of construction, and of the operating costs of the railroads over which they had jurisdiction. This provision undoubtedly prevented much of the serious evil which arose in other parts of the country, where misstatements regarding money received from stock subscriptions and expended in construction were not uncommon. The railroads were all placed by their charters, under

the jurisdiction of city governments whenever their route lay within the city limits. No portion of the railroad might be constructed in any city "except with the consent of the Mayor, alderman, common council and freemen." The use of "steam power" within city limits was also subject to approval by the city authorities.

Practically all of the early railroads were built at first as single track roads. In many instances grading was initially provided for the second track, which in some cases soon became necessary. The track rails of the earliest roads consisted of flat wrought-iron bars or straps spiked along the top of longitudinal wooden stringers. These were replaced by heavier rail and crosstie construction in the late 'forties and early 'fifties, service sometimes being entirely discontinued while the change was made.

The earliest bridges were usually wood trestles, where conditions permitted, or masonry arches when money was available. Wood trusses of the so-called patent "Howe" type, then recently developed, were also common, and were successful and economical provided they were properly maintained, and were not overloaded, and did not catch fire.

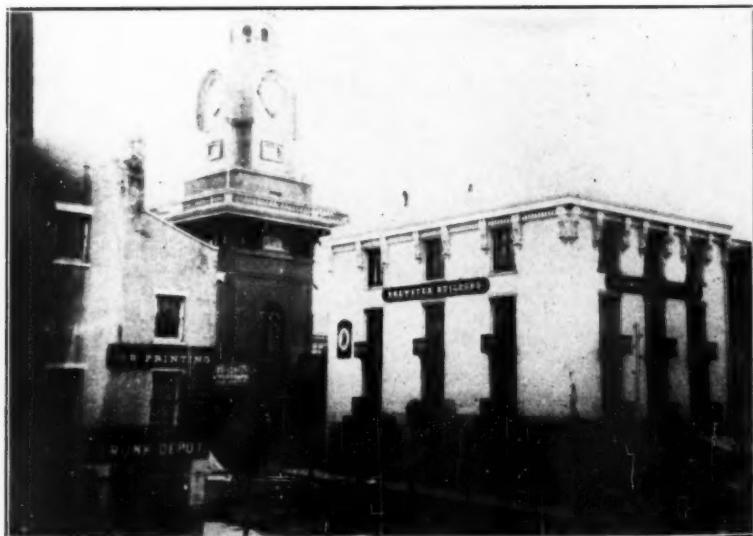
The operation of railroads without the aid of electric communication presented a number of problems which the modern railroad operator does not often meet. Morse, the inventor of the telegraph, sent his famous first message by wire in 1844. After that, the development of telegraphic communication was slow, and it was not until 1851 that its first application to railroad operation was made. General adoption of the telegraph in the railroad field, furthermore, did not arrive until the late 'fifties. Thus for about twenty years after the railroads were introduced, they were without means of transmitting intelligence more quickly than by the trains themselves, and the problems thus imposed were not inconsiderable, especially on single track routes. The first train to run from New Haven to New York, in celebration of Christmas Day, 1848, was ignominiously obliged to return from Williams Bridge, New York, the Harlem connection not having been completed as had been supposed.

A distinctive type of locomotive was quickly standardized in this country, known as the "American" type, with a four-wheel guiding truck forward and two pairs of driving wheels, coupled by means of side rods and connected to cylinders placed under the forward end of the horizontal boiler. The early locomotives had no cabs or shelter for the engine crew, who were obliged to stand on an open platform, protected only by a very sketchy railing. It was argued that the stage-coach drivers were accustomed to withstand the rigors of the weather and that there was no reason why engine drivers should not do so. Wood was at first used exclusively as fuel in Connecticut, partly on account of the high cost of transporting coal from the coal fields and the plentiful wood supply locally available, and also partly on account of technical difficulties met at that period in burning coal. The burning of wood necessitated the use of elaborate screens or "spark catchers" in the smoke stacks, which in turn resulted in very large balloon-like stacks

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New York & New Haven R. R. Station, Chapel Street, New Haven. From Henry Austin's Drawing.



Tower of the Chapel Street Station, New Haven.

characteristic of the early locomotives, and immortalized in many old railroad prints. Even with the use of screens, blazing sparks "vomited from the stacks", as one contemporary writer put it, often set fire to railroad bridges and neighboring buildings, to say nothing of the trains themselves.

One of the pleasant characteristics of the early locomotive which grew from the first was that of giving each engine a name, and thus an extra bit of individuality. The names assigned were sometimes fancy ones, such as *Planet*, *Lion*, *Express*, or *Comet*, sometimes of towns through which the railroad passed, and sometimes names of officers or directors of the company, or of contemporary celebrities or historic characters. The first locomotive to draw a train between Providence and Stonington was the "Roger Williams." The old locomotive "Whistler" was so called, not because it could whistle, but after G. W. Whistler, a well-known early New England railroad man and father of the artist James.

The first passenger cars were practically nothing but stage-coach bodies mounted on four wheels. The "Brake man" occupied the seat on the outside formerly occupied by the "boots", operating the brakes by means of a long lever. There was room "on top" for passengers. Very shortly, the cars were enlarged by placing a number of stage-coach bodies together, back-to-back, upon a single frame, an arrangement which still persists in the compartment cars which are in use abroad. In this country, perhaps on account of the spirit of democracy, perhaps on account of the necessity for adequate heat, the old stage-coach arrangement was abandoned within a few years and a design adopted which was essentially the arrangement in use today and which was thus described in 1850 by Dionysius Lardner, a contemporary commentator.

"The form and structure of the carriages is a source of considerable economy in the working of the lines. The passenger carriages are not distinguished, as in Europe, by different modes of providing for the ease and comfort of the traveller. There are no first, second and third classes. All are first class, or rather of the same class. The carriage consists of a long body like that of a London omnibus, but much wider, and twice or thrice the length. The doors of exit and entrance are at each end; a line of windows being placed at each side, similar exactly to those of an omnibus. Along the center of this species of caravan is an alley or passage just wide enough to allow one person to walk from end to end. On either side of this alley are seats for passengers extending crossways. Each seat accommodates two persons; four sitting in each row, two at each side of the alley. There are from fifteen to twenty of these seats, so that the carriage accommodates from sixty to eighty passengers. In cold weather, a small stove is placed near the center of the carriage, the smokepipe of which passes out through the roof; and a good lamp is placed at each end for illuminating during the night. The vehicle is perfectly lighted and warmed. The seats are cushioned; and their backs, consisting of a simple wadded board, about six inches broad, are so supported that the passenger may at his pleasure turn them either way, so as to turn his face or his back to the engine. For the convenience of ladies who travel unaccompanied by gentlemen, or who otherwise desire to be apart, a small room, appropriately furnished, is sometimes attached to the end of the carriage, admission to which is forbidden to gentlemen."

It is interesting to compare this description with observations made by Dickens on the occasion of his visit in 1842 to this country. Said Dickens in "American Notes:"

"There are no first and second class carriages as with us; but there is a gentlemen's car and a ladies' car; the main distinction between which is that in the first, everybody smokes; and in the second nobody does. There is a great deal of jolting, a great deal of noise, a great deal of wall, not much window, a locomotive engine, a shriek, and a bell.

"The cars are like shabby omnibuses, but larger; holding thirty, forty, fifty people. The seats, instead of stretching from end to end, are placed cross-wise. Each seat holds two persons. There is a long row of them on each side of the caravan, a narrow passage up the middle, and a door at both ends. In the centre of the carriage there is usually a stove, fed with charcoal or anthracite coal; which is for the most part red-hot. It is insufferably close; and you see the hot air fluttering between yourself and any other object you may happen to look at, like the Ghost of smoke.

"In the ladies' car, there are a great many gentlemen who have ladies with them. There are also a great many ladies who have nobody with them; for any lady may travel alone from one end of the United States to the other and be certain of the most considerate treatment everywhere. The conductor or check-taker, or guard, or whatever he may be, wears no uniform. He walks up and down the car, and in and out of it, as his fancy dictates; leans against the door with his hands in his pockets and stares at you, if you happen to be a stranger; or enters into conversation with the passengers about him. . . ."

(In traveling from Hartford to New Haven after a trip by steamer on the Connecticut River from Springfield to Hartford, Mr. Dickens recounts that "upon the way the guard and I were formally introduced to each other (as we usually were on such occasions) and exchanged a variety of small-talk. We reached New Haven at eight o'clock, after a journey of three hours. . . .")

It is of interest that it was not until he traveled on railroads further south that Dickens became so much disturbed over the habit of tobacco chewing on railroad cars and what he might have called "great expectorations."

The individual railroad commissioners were succeeded in 1853 by a single body, known as the General Railroad Commission, predecessor of the present Public Utilities Commission of Connecticut. This consisted of three commissioners at a compensation of three dollars a day, to have jurisdiction over all the railroads in the State, in order to insure that their affairs would be managed according to law, and "conformably with public safety and convenience." Provision was made at that time also to develop the beginnings of a uniform system of railroad accounting and the compilation of statistics by the Commission each year, to facilitate comparison of data among the various railroads. Previous to the appointment of the Commission, railroad legislation in Connecticut had been somewhat haphazard, and each railroad managed its affairs with little regard for its neighbors. The Commission assumed general oversight over matters of safety and costs of operation and of service, with particular reference to establishing convenient connections for passengers and freight between adjacent railroads, a subject which had been a source of considerable complaint.

New Haven's first railroad was the *Hartford and New Haven Railroad* which may be said to have also been Connecticut's first railroad. As has been said, the line to Stonington from Providence antedated it, but a stretch of only seven miles of that route lay within Connecticut's boundaries. As was natural, the operators of steamboats, turnpikes, toll bridges and stage-coaches did not hesitate to do all in their power to obstruct the introduction of railroad. The Milford and New Haven Turnpike Co. in 1839 complained bitterly to the General Assembly at one of the charter hearings that "No imperious call of the public demands a railway over a territory already supplied with turnpike and packet lines . . ." Even earlier, in 1832, when the Hartford and New Haven Railroad was first under discussion, a group of well-known men, including Simeon Baldwin, Roger Sherman, William Bristol and Epaphroditus Champion, representing stockholders of turnpike companies, submitted a long memorandum, concluding. . . "By the grant now contemplated, four turnpike companies between New Haven and Hartford, in which many widows, orphans and persons in moderate circumstances have invested their property; steam navigation between Hartford and New York and steamboats between the latter city and New Haven and many of the other vested interests of our citizens would be utterly destroyed." The Hartford and New Haven Railroad was chartered in 1833, among the incorporators being James Brewster, John Babcock, John S. Mitchell, Joel Root, Alexander Harrison, Obadiah Pease, Richard Hubbard and Elisha Cowles. Mr. Brewster was the first president and the first board of directors included Messrs. S. F. Hitecock, who succeeded Mr. Brewster as President, John S. Mitchell, Philip S. Galpin, W. H. Elliot and John T. Clark of New Haven, Messrs. Geo. Putnam and James Goodwin, Jr. of Hartford, Messrs. Morris Ketcham and Elisha A. Cowles of Meriden. Mr. Obadiah Pease was Secretary-Treasurer.

Many communities lying in the territory between Middletown and the Connecticut River on the East and the Farmington Canal on the west, were anxious for the road to include them in its route, but the Town of Newington presented a remonstrance, representing that they were "a peaceable, orderly people" and begging that their quiet might not be interrupted by "steam cars and an influx of strangers."

Alexander C. Twinning—Yale '20—a notable and exceedingly versatile engineer of that period, was employed in the autumn of 1835 to make surveys and recommend a route. He was instructed by the Board of Directors to insure that "friends of the different routes" should be patiently and publicly heard. After very careful consideration, Mr. Twinning recommended a route which is nearly that of the railroad today between New Haven and Hartford.

The alternative routes which presented themselves permitted favorable competition in the matter of acquiring land for right-of-way, and the directors "deemed it prudent" to benefit by the experience of others and obtain land by private arrangement, "and avoid if possible availing themselves of the extreme though necessary powers . . . the Legislature had given them."

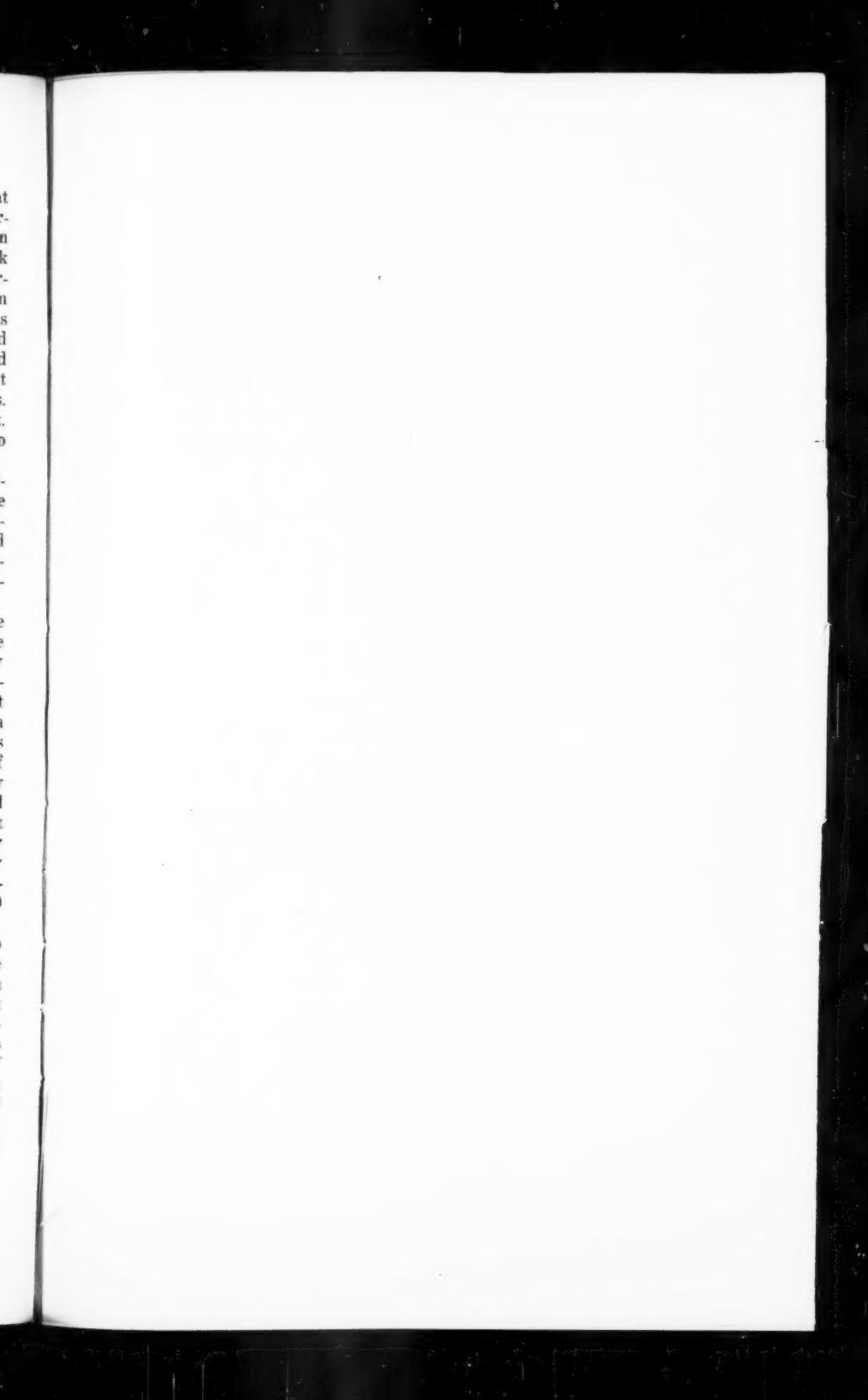
The road had from the first made plans to go direct to tidewater at New Haven to connect with Sound steamboats. After considering various schemes, it was determined that the most favorable terminal location was "Upon Tomlinson's Bridge—so-called." The majority of stock of that toll bridge company operating from New Haven across the harbor was therefore acquired, and arrangements were made to construct an additional dock, and dredge a channel up to it. The main route was thus established along what is now a branch of the New Haven Railroad across Grand Avenue and Water Street, and the terminal was located near the famous Pavilion Hotel at the South end of Water Street, about where the railroad freight house (in the vicinity of Belle Dock) now is. Direct connections were thus made here with steamboats for New York. It would be of interest at some time to place a tablet at that spot, to commemorate New Haven's first railroad terminal.

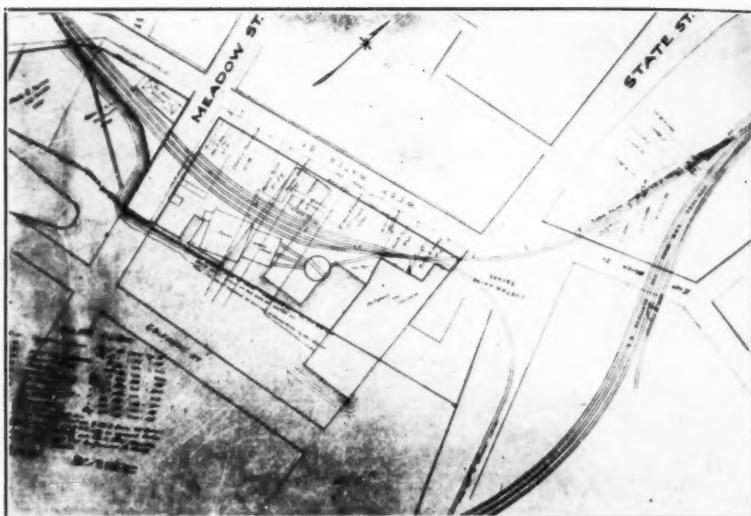
After the first flush of enthusiasm had died down among the investing public in subscribing for stock in the new project, the directors were somewhat embarrassed in their endeavor to collect subsequent installments on the stock subscriptions. The subscribers, they complained rather bitterly, "could not or would not" pay. This slowed up construction work which in turn further damped the ardor of the stockholders,—a vicious circle.

The delays of the stockholders in meeting subscriptions led the directors to appeal to the State Legislature for a grant to complete the road. The "Liberal and patriotic Massachusetts legislature", they pointed out, had granted \$2,000,000. for the construction of the Western Railroad (Now a part of the Boston & Albany). The Connecticut Legislature, however, was not "patriotic or liberal" enough to make a grant, and after considerable effort the directors reported that it was necessary to borrow money from "capitalists who lend as a matter of business, and not for benevolence or patriotism" (and incidentally charged 7%). The New Haven Daily Herald for July 22, 1837 said in this connection, editorially, "We observe in the Hartford papers that the shares of stock in the Hartford and New Haven Railroad Company standing on the books of said company at the Phoenix Bank in the City of Hartford, on which the fifth installment [is due] will be sold at Public Auction on Wednesday, the twenty-sixth day of July, 1837, at 10 o'clock A.M. at the auction store of Hudson and Putnam in said city.

This is probably a coercive measure to induce the subscribers to pay up their stock. We are glad to learn that amid the pressure of the times this great enterprise is to go on, the Directors having obtained a loan for the purpose. After the large investment and improvements that have been made, it is hardly conceivable that the scheme should be abandoned, while at the same time there can hardly be a rational doubt as to its productiveness to the stockholders and usefulness to the public."

The contracts were let in twenty-one sections, and grading started July 1, 1836. Timber for rails was pine from Georgia, while the bed sills came from Maine and "cross-ties" of white chestnut were purchased locally. The iron strap 13/16" thick for the rails was purchased





Site of the Present General Offices of the New Haven R. R. showing terminal of the New Haven & Derby R. R. and connection with the N. Y. N. H. & H. R. R.



New Haven & Derby Coach—with Camera Fan Excursion Prior to the Gay Nineties.

in England. Some delay was experienced in receiving the iron, which was shipped in leaky sailing craft which, on two or three occasions, were obliged to put back to Bristol for repairs. Finally, discouraged by this condition, the directors issued instructions that the rails should be sent coastwise from Wales, to London or Liverpool, and then "reshipped in the regular packets for New York." An effort was made to prevail upon Congress to remit the duty on "Rail Road Iron"; this duty item alone amounted to about \$100,000. on the original rails. The effort was unsuccessful.

The track was finally laid into Meriden December 1838. This initial operation thus did not take place, until Connecticut River navigation had closed for the season, and the road "opened with a press of business", large amounts of freight having accumulated at New Haven for shipment. During the Winter of 1838-9 however, "which was particularly favorable to transportation by trains", not half of the freight between New Haven and Hartford was taken on the railroad, because, said the directors, "The teams from beyond Hartford preferred to continue on from Meriden to New Haven, rather than load and unload at Meriden."

New Haven Daily Herald, Jan. 25, 1839, mentioned this short section of railroad, (there being no railroad up the Hudson River at that time) as follows:

"This road . . . between New Haven and Meriden . . . is decidedly the best and most popular route in the winter season between New York and Albany . . . The cars will leave the steamboat wharf in New Haven daily, on the arrival of the boats from New York at about 1 p. m.; and passengers for Hartford, Albany and the towns intermediate, will proceed immediately by rail to Meriden, from thence in Post Coaches to Hartford, arriving at about 4 p. m.

Post coaches leave Hartford at 10 p. m. and arrive in Albany about 3 o'clock p. m. next day . . ."

On Dec. 14, 1839, a year after the road was opened to Meriden and just over a century ago, it was so far completed that a train was conducted to the engine house in the city of Hartford "traversing the entire distance from New Haven." After this trip there was a very heavy snow storm which drifted across the road in many places to a great height and a day and a half were required to clear the track.

At a meeting of the directors, as reported in the Palladium Dec. 8, 1839, it was voted (5 to 2) to use the road on the Sabbath for the transportation of mails, in order not to lose the business to competitive agencies, but the proposal to permit the carrying of passengers on Sunday was lost by a vote of 4 to 3.

An editorial in the New Haven Daily Herald somewhat frivolously called attention to the name adopted for the new railroad (Feb. 8, 1839) indicating some jealousy between the two terminal cities. Said the Herald: "New Haven & Hartford Railroad. We call it so because it is its true designation, but its chartered cognomination is the Hartford and New Haven Railroad, given we presume in complaisance to our sister Metropolis who is exceedingly tenacious of precedence and who to

her honor be it said seldom comes off second best in matters of public enterprise, though in this instance she is a little behind her leader. . . .”

The first Hartford terminal was established and operated until 1850 near the site of what is now the Jeremy Hoadley Memorial Bridge in Bushnell Park. The station building faced what is now Wells Street and the terminal tracks were on a trestle over the Park River (Soon to be diverted to conduit in the interest of flood control). The railroad tracks thus ran through what is now the park in front of the State House site, which was then occupied by Trinity College. A tablet on the Hoadley bridge marks the location of the passenger station.

The company early determined to manufacture its own cars or “transportation carriages,” to save construction cost and transportation expense, and to facilitate repairs. A car factory was therefore established in New Haven, where highly skilled labor was already available, trained in the manufacture of coaches.

In the report of the directors in 1841, they express gratification that

“While accounts are almost daily reaching us of the destruction of life and property on other railroads, on ours no accident has occurred of any moment from its commencement to the present time. For this happy result we are indebted, under a kind Providence, in a great degree, to the skill, prudence and care of our Superintendent of Motive Power, Mr. Wm. F. Hardy.”

The following year a similar memorandum was presented:

“It is not less a subject of devout gratitude to the Almighty Disposer of events, as well as of mutual gratulation to us that while the past year has teemed with melancholy accidents all around, the companies, (sic) Rail Road has continued to be signally preserved, and the Board has no material accident to record, affecting either life or property.”

In subsequent reports the road was so free from accidents that the Almighty Disposer of events was not given specific credit. The first wreck to cause loss of life or injury to any passenger occurred in 1852—on account of a broken rail—fifteen years after operation started.

The question of extending the railroad north of Hartford to Springfield, where connection could be made with the Western Railroad (now the Boston & Albany) had been in the minds of the directors, and in October 1842 they obtained from the legislature an act embracing the objects they desired. The route selected is practically that of the railroad today, crossing the Connecticut River at Warehouse Point. The Connecticut legislature required the installation of a draw span in the bridge, though the reason for the requirement was at that time somewhat obscure—since the river was navigable only to very small boats. This Connecticut River bridge was one of the notable bridges of its time. Built in 1844, it had in addition to the draw span over the river and spans over the adjacent canal and towpath, seven wood Howe truss spans of one hundred and seventy-seven feet each, the total length of the bridge being 1500 feet. The bridge was completely destroyed in a gale Oct. 13, 1846 by being blown bodily off its piers into the river. It was replaced by a new bridge in forty-five days!

Replacement of the original strap rail by T rail of nearly the section used today, weighing 57 lbs., was accomplished in 1846. Double tracking was started in 1852 and completed to Springfield the following year.

An elaborate arrangement had been made with the New Haven Steamboat Company, providing for train-boat connection at New Haven for New York, for a period of three years from the opening of the railroad. The management of the Connecticut River boat line, running from Hartford to New York, viewed this arrangement with concern and threatened to interfere with it by stopping their boats at New Haven both ways, thus competing with the New Haven Steamboat Company, which soon lost its nerve and sold out to the Connecticut River Co., a step, according to the directors, "universally deplored by the citizens of New Haven and by the public at large who travel on this line."

The new Steamboat management was very unpleasant to the railroad and assigned to the day-line, in fulfilling the letter of the contract, "an old ferry boat utterly unfit for any line." It also undertook to carry passengers on its night boats, without change, from Hartford to New York, for one dollar. The railroad retaliated by obtaining legislative right to operate steamboats of its own between New Haven and New York, and purchased three steamboats from C. Vanderbilt for this purpose.

The Hartford and New Haven Railroad was for over ten years New Haven's only railroad, although during that period a number of other roads were being opened in various parts of the State. Plans were being made, however, and construction was progressing for the New York and New Haven Railroad, and also of the substitution of a railroad for the Northampton Canal. Both these activities were of vital interest to the directors of the Hartford and New Haven railroad, who saw in the first project opportunity for attractive coordination in capturing the New York-Hartford traffic from Long Island Sound, and in the second, bitter competition for traffic from the north.

The N. Y. & N. H. RR. was chartered June 10, 1844 by Joseph E. Sheffield, Sam J. Hitchcock, Wm. A. Reynolds, Nathan Smith, Nathaniel R. Clark, P. P. F. DeGrand, S. S. Littlehale, Elihu Townsend and Anson G. Phelps. Mr. Twining was employed to make a survey and recommend a proper location. Two main routes were suggested, one "through or near the villages and settlements on the coast" and the other "through or near such inland towns as might afford the most advantageous location for a railroad."

Mr. Twining's report to the executive committee (consisting of Samuel J. Hitchcock and Jos. E. Sheffield) was very thorough and contains some interesting reading. He proposed two or three routes through the City of New Haven, each naturally taking departure from the existing Hartford and New Haven Railroad tracks. Among the schemes was one route starting on the marshes of Mill River, and curving into a course nearly due west on leaving the marsh. Said Mr. Twining, the "line would pass through the spacious and elegant situations in the north east

quarter of the city without injurious interference and would cut the Hartford turnpike [Whitney Avenue] at a very convenient depth and might penetrate beneath Sachem's Wood by a short tunnel, through the sand stone of the easiest description", thence "varying its course but slightly and bridging the canal about one thousand feet north of the cemetery lock," the line was to be "advanced across the plain." Mr. Twining called attention to the idea that "Very convenient sites for a depot may be selected either east or west of Sachem's Wood." It would be interesting to speculate on the growth of the city if this suggested route had been selected. Instead, an alternative route was adopted by the directors "through the precise center of the city", passing, "with but two exceptions, under all the streets by a deep cut," and utilizing the old Canal bed, leased from the Canal Company in perpetuity, between Grand Street (now Grand Avenue) and the Canal basin at Water Street, the site of the present railroad main line.

The first president was Mr. Robert Schuyler, a prominent New York financier, chosen because of his solid background and financial reputation, to lend to the new company the advantages of the extreme respectability of his name. It was Mr. Schuyler who devised the scheme, in his capacity as President, of issuing stock in two general lots, one of which was sold for the benefit of the company and the other for his own personal account. The subsequent unscrambling of this and other schemes devised by Mr. Schuyler gave much food for legal discussion over a considerable period of time. The first board of directors included besides Mr. Schuyler, President; Messrs. Morris Ketchum, Anson G. Phelps (the founder of Ansonia), Elihu Townsend, Henry J. Sanford, W. P. Burrall, Steven Tomlinson, J. E. Sheffield (the founder of the Sheffield Scientific School), and F. R. Griffin.

It was the not unnatural thought of the New York and New Haven directors that it would be quite desirable to discourage connection between the Hartford and New Haven Railroad and the New York Steam-boats, and to facilitate the connection of that road with their property. After much discussion, the "immense interests to be affected and protected on both sides" having as the directors put it "induced extreme caution", an agreement was made on April 30, 1849 with the Hartford and New Haven Railroad Company, wherein a rail connection was established at Mill River between the two roads, and a joint "station house" provided at Chapel Street, the site of the old "Canal Steps", whence passengers had formerly embarked for a voyage northward on the old Farmington Canal. By this Agreement the Hartford and New Haven agreed to run all its trains, except the night boat train, to and from the Chapel Street station and to withdraw from its old terminus at Tomlinson Bridge on Water Street. The New York and New Haven agreed to afford accommodation for the business of the Hartford and New Haven at the Chapel Street Station, and to allow its sister railroad the use of its tracks between Grand Street and the junction, without charge. It also agreed to see to it that the Canal Road which it had leased in 1848 as far as Plainville would not be extended into Massachusetts where it

might compete to an embarrassing degree with the Hartford Road. It was all a very complicated arrangement which later caused some mutual recrimination among the various participants.

The location of the railroad through the center of the town "met universal approbation" reported the directors, and the "liberal treatment and high consideration extended to the company by the government and intelligent citizens" induced the "only departure from a strict rule of economy" which had been observed by the directors in the construction of the Road, and led to the erection from a design by Henry Austin "a popular architect of the city" [designer of many well-known New Haven buildings, including the City Hall, the former Yale University Library—now Dwight Chapel—and the gateway to the Grove Street cemetery] "of a station house of more ornament and elegance than would otherwise have been built, but still neither more spacious or elegant than was due to the central portion of the city which was occupied, the vast and necessary business to be accommodated and the style of buildings in the immediate vicinity. To the liberality of the owner [James Brewster] of one of the buildings, who has done much for the architectural ornament of the city, this company is indebted for the clock which surmounts the tower on Chapel Street."

The new station was described thus by a contemporary observer:

"This beautiful edifice is situated in Union Street and occupies the entire square from Chapel to Cherry Street, being 300 ft. in length. The style of architecture is Italian. In the tower (140 ft. above the pavement and 156 ft. above the tracks of the railroad) are the engineers room and the office of the Company, also other convenient and useful apartments. The grand entrance for passengers is from Union Street by a spacious doorway into the center of the building. On either side of the main hall or platform, are extensive Parlors, that on the left being for the accommodations of ladies, and is furnished with a profusion of rich and costly sofas, divans, chairs, ottomans, mirrors, etc, with convenient dressing rooms attached . . . Obliging servants are always in attendance . . . The Parlor on the right is for gentlemen's use, and is to be furnished as a reading room.

"The Rail Road track . . . is reached by easy flights of stairs. The descent to the track of the New Haven and Northampton (or the Canal) Railroad is from the west side of the platform directly opposite the main entrance. The Ticket Office is on the left side of the grand hall with ornamental windows of ground glass, one of which opens into the Ladies' Parlor . . . In the north tower . . . is a clock with glazed faces 8 feet in diameter . . . This clock is to be illuminated with gas; . . . Twenty feet above the clock a large bell is suspended, the ringing of which indicates the arrival and departure of the trains of cars on the New York and New Haven, as well as on the New Haven and Northampton and the New Haven and Springfield Rail Roads, all of which radiate from this central point. A watchman being stationed in this building at night, the bell is usually the first to sound its note of alarm in cases of fire. From the belfry of this lofty tower . . . the spectator looks down on a forest of luxuriant elms, maples &c intermingled with which are the stately mansions, beautiful cottages, towering spires and tasteful gardens of our sylvan city . . . Long may it stand as an enduring monument of the taste, and liberality and the enterprise of its projectors."

This is the depot which it was found necessary to "remodel twice during the next two years," and which, about fifteen years later, was

the subject of comment by Dr. Oliver Wendell Holmes, who, in his story *My Hunt after "The Captain"*, bringing his son (the late Justice Holmes) back from the south, referred to ". . . New Haven. . . cursed with a detestable depot, whose niggardly arrangements crowd the track so murderously close to the wall. . . ."

In 1866, after a great deal of bitter public criticism, the railroad was ordered by the State Legislature "to make such alterations in the lighting and accommodation as will meet the approval of the Mayor and General Assembly." The building was entirely abandoned a few years later, and replaced by the large station at the foot of Meadow Street, which in turn was succeeded by the present building. After a period as a public market the building was burned, July 4th 1894. The *Commercial Hotel* on State Street adjacent to the Chapel Street depot was connected to it, and the hotel lobby used as one of the entrances to the station. This building is now standing, having been subsequently used for but smoking! *Sic transit!*

The construction of the road between New York and New Haven crossing, as it did, a number of rivers, was very expensive—there were 8,313 feet of bridges with six draw spans prescribed in the State of Connecticut, including a drawbridge across an inlet of New Haven's harbor, since filled in. The entrance into New York was over the tracks of the New York and Harlem Railroad. The cars were uncoupled at Forty-second Street and drawn by horses to the terminal station at Canal Street until July 15th 1857, when the terminal was changed to 26th Street. Agreements between the New Haven and the Harlem Railroads provided for the connection between the two roads at Williams' Bridge, the New Haven Road having the right to run its engines and cars over the tracks of the Harlem road between Williams' Bridge and New York City. The Harlem Company also furnished room for the New Haven Company's engine and a car house at 33rd Street and also at 42nd Street. A second track was built by the Harlem Company between Williams' Bridge and New York from funds loaned to it for this purpose by the New Haven Company.

It was in 1872 that the New York and New Haven and the Hartford and New Haven Railroads combined by a mutual exchange of stock to form the New York, New Haven and Hartford Railroad, the nucleus of the present system with which we are all so familiar.

The road, opened in 1849, was originally single track, but traffic increased so rapidly that the second track was soon started and completed (except at drawbridges) in 1857. The route is now a four track line and is electrically operated throughout its length between New Haven and New York.

New Haven's third railroad the N. H. & N. RR. was built in general along the route of the old Northampton Canal. The Canal directors obtained authority from the legislature in 1846 to build a railroad along the canal route, the incorporators at that time having been Justus Harrison, Samuel St. John and Samuel Hinckley. The board of directors included Joe. E. Sheffield, President, and Harvey S. Hoadley, Henry

Whitney, W. A. Larned, W. Johnson, W. H. Ellis and Russell Hotchkiss of New Haven, as well as Gouverneur Morris and J. T. Gerry of New York. Henry Farnam was "Engineer and Supt.", S. D. Pardee, Treasurer, and James Redfield, Secretary. A. C. Twining was employed to survey the new line, adapting the canal route to the railroad requirements so far as possible. The construction was completed between New Haven and Plainville in 1848, generally along the tow path of the canal, though as the directors optimistically remarked "As it is destined to become the main stem of a great extent of future roads . . . we have run it nearly straight and level instead of following the canal . . ." The existence of the canal, provided a ready means of handling heavy construction materials used in building the railroad. The stations at Plainville and Collinsville were designed by Henry Austin, the architect of the Chapel Station at New Haven.

The first terminal was established at Temple Street on the present site of the Mason Laboratory and St. Mary's Church, where temporary passenger and freight stations were built, and an engine house, turntable, etc. installed.

The city having established no water supply of its own up to that time, was somewhat concerned over the possible loss of the canal water, which had been relied upon as a reservoir through the city for fire protection. The directors, therefore, agreed to provide a water supply, reporting in 1848: "In availing ourselves of the bed of the canal through the city for the railroad, care will be taken to preserve the water power a short distance from town (elevated 92 feet above the ground of the central green) to supply the city with water at a future day at small cost and assured income to the company." This scheme was never developed, however.

The route of the road north from the Temple Street terminal was in general that of the present railroad, though the original line as located in Hamden ran for some distance "On and along the old Cheshire turnpike, resulting in accidents, loss and litigation." In 1880, therefore, an agreement was made with the town to remove the tracks for six and a half miles from a point "near the northerly line of New Haven to the 'Point of Rocks'" at Mt. Carmel. The town paid \$14,000 towards the change of tracks to the present location, whereby fifty grade crossings were eliminated at one time.

On Jan. 17, 1848 the road, in celebrating its opening in a manner somewhat typical of the period, ran an "excursion", which was announced thus in the Palladium:—

The "Mayor, Aldermen and Common Council, the Selectmen and other town officers in charge of the city, members of the law and medical profession, together with the faculty professors and officers of Yale College" were "respectfully invited to ride over the road with the stockholders, the cars to leave the head of Temple Street at nine o'clock and return in time for dinner." The trip to Plainville, as reported in the Palladium subsequently, was "in all respects an agreeable one. Quite a crowd of persons, including ladies, had gathered near the place of starting to witness the departure. Soon the company invited assembled and filled the seats of four as splendid cars as were ever placed upon an American railroad.

"At nine o'clock the whistle and bell gave notice of an immediate start and the train was instantly progressing toward Hamden and Cheshire. On arriving at the latter place, several crowds were in waiting, who testified to their pleasure at the sight before them by loud and repeated cheers.

"After stopping a few moments at this place and shaking hands with their friends at the Cheshire Station, the cars moved on and were soon at Southington, and here was great excitement. The bells of the churches were ringing a merry peal, the cannon was thundering out its louder notes, and the people were all on hand sending up a loud huzza during the whole time of the stopping of the train.

"But again the cars were started and were speeding on toward Plainville, attracting of course great attention all the way. Soon we arrived at the station at Plainville, an enterprising little village whose inhabitants had ceased from all servile labor and given themselves up to the enjoyment of the day and to the occasion.

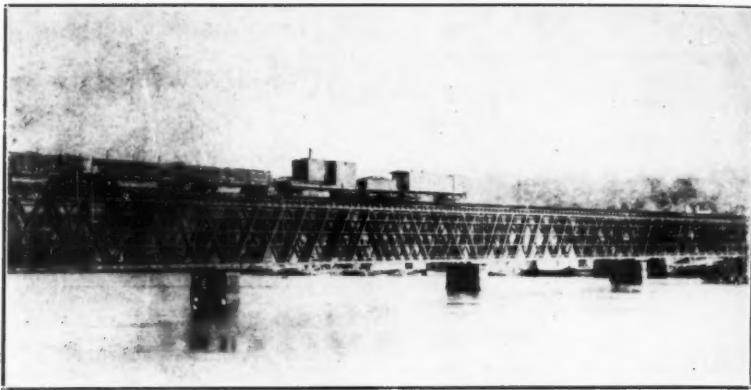
"The locomotive (named the "Cheshire") supported the American flag and as it passed the splendid depot, a salute was fired and an elegant brass band greeted the company with its inspiring music. Here we were pleased to observe a banner on which was inscribed 'Success to Sheffield and Farnam.' The neighboring factories were crowded with ladies whose white handkerchiefs were in constant motion waving the visitors a friendly welcome.

"After a pause of about half an hour, during which time there was a pretty exchange of congratulations between the people of Plainville and the people of New Haven, the train was homeward bound. It departed amid the cheers of the people, the firing of cannon . . . On arriving at the temporary station at the head of Temple Street, the party as soon as it left the cars gave three hearty cheers for Mr. Sheffield, the chief proprietor, and Mr. Farnam, his assistant and also a proprietor."

The road immediately fell into financial troubles and was leased by the New York and New Haven Road from Grand St. (Grand Ave.) to Plainville for a period of twenty years, the canal right-of-way between Grand Street and the basin at Water Street being leased in perpetuity. The terminal was transferred from Temple Street to the Chapel St. Station, described above, and the operations of the two railroads merged.

The Canal Road directors had planned extensions north of Plainville and leased to the New York and New Haven road in 1850 the line to Tariffville and Collinsville. Further extensions were blocked for mysterious reasons by such matters as court injunction, refusal of charter rights, etc. It was subsequently indicated that these adverse forces were inspired by the agreement between the Hartford and New Haven and the New York and New Haven, as has been seen.

The lease to the New York and New Haven for the road north of New Haven expired in 1869 and the canal road was returned to its owners for operation. The Canal Road then built its own shops and constructed a pier, filling in the old canal basin (adjacent to Water Street) by dirt from Hamden, a lot of ten acres at Centerville having been acquired for the purpose just north of Dixwell Avenue. This excavation may be seen today. Further financial troubles arose and the Canal Road was again leased by the New York, New Haven and Hartford Railroad in 1887, and was purchased by that road in 1910.



Wooden Truss Bridge at Fair Haven on the Shore Line route of the New Haven to New London.



The Train is In! Scene at the Fair Haven Station on the Shore Line route of the New Haven and New London R. R.

The next New Haven Railroad was the N. H. & N. L. RR., chartered in 1848. Among the incorporators are listed Charles J. McCurdy, Chas. C. Griswold, Richard S. Griswold, Thos. W. Williams, Henry S. Champlin, Gilbert Pratt, Geo. Dickenson, Amos Sheffield, Eli A. Elliott, T. V. Meigs, Fred R. Griffing, Levi S. Parsons.

The road leased from the N. Y. and N. H. R. R., land for a track of its own from Mill River to Grand Street (Grand Ave.) and joined the Chapel Street passenger station. The line was opened in 1852, starting from Mill River along what is now the Folding Paper Box Co. siding. The abandoned right-of-way and even the rails may be seen in several places through Fair Haven; it crossed the Quinnipiac River on a large wood truss bridge just north of Grand Avenue, and joined the present main line route east of East Haven. The route, like other routes out of New Haven, was surveyed by Alex C. Twining.

Financial difficulties continuously beset the railroad and it was reorganized a number of times, together with its associated company, the New London and Stonington Railroad, which had been built to complete connection along the shore line with the Providence and Stonington line—in an endeavor to make a continuous rail route to Boston.

The route along the shore between New Haven and Stonington necessitated crossing a number of navigable rivers and inlets some by means of drawbridges and two by ferries. The Connecticut River and Thames River crossings were not bridged for many years, the bridge over the Connecticut River being first built in 1870 and that at New London not until 1889. The ferrying of railroad cars over these rivers was a slow process, though the Railroad Commission, in 1853, in referring to the Saybrook ferry said:—

“ . . . about five minutes more would be lost in supplying the engine with wood and water at this place and passing over the river on a bridge. The boat is of ample dimensions and arranged with many conveniences. The ferry is found in practice rather of an accommodation than otherwise to the passengers of the road.”

Dickens, in describing a railroad journey between New York and Boston in November or December 1867, thus commented on the ferry process:

“ . . . We were beaten about yesterday as if we had been aboard the Cuba. Two rivers have to be crossed, and each time the whole train is banged aboard a big steamer. The steamer rises and falls with the river, which the railroad don't do; and the train is either banged up hill or banged down hill. In coming off the steamer at one of these crossings yesterday, we were banged up such a height that the rope broke, and our carriage rushed back with a run down hill into the boat again. I whisked out in a moment, and two or three others after me; but nobody else seemed to care about it.”

This Shore Line route was leased subsequently by the N. Y. N. H. & H. R. R. which thus consolidated operation and eliminated the necessity of a change of cars at New Haven. The road was merged with the New Haven in 1897 after purchase by the New Haven of majority of stock.

New Haven's fifth railroad was the N. H. M. & W. R. R., organized in 1867 and reorganized subsequently as the Boston and New York Air Line Railroad Company after financial difficulties were experienced, in spite of assistance from several communities through which the railroad ran. The incorporators of the New Haven, Middletown and Willimantic Railroad were:—David Lyman, Henry G. Hubbard, Horace Smith, Charles Parker, Tilton E. Doolittle, Bartlett Bent, Jr., Charles G. Bush, O. Vincent Coffin, and Moses E. Tirrel. David Lyman of Middlefield was the first president. Upon his death in 1870 before the road was started, he was succeeded by Julius Hotchkiss. The first board of directors included also:—Benjamin Douglass, J. M. Douglass, Nicholas V. Fagan, Chas. C. Hubbard, Allyn M. Colgrave, Chas. A. Rapello, E. W. Serrell, L. W. Sperry, Geo. Gillman, W. T. Gleason and Chas. A. Buell. The railroad took its departure at Mill River, where the Hartford and New Haven, the New York and New Haven, and the New Haven and New London railroad connections already existed, utilizing the tracks of the New York and New Haven Railroad from the Chapel Street passenger station. The route crossed the Connecticut River at Middletown. The first charter specified that the bridge should have a span not less than 625 feet long and a height not less than 140 feet above the river. This was amended the following year to permit draw spans, the amended bill stipulating two draw spans each not less than 130 ft. opening, to be kept open, as in other requirements elsewhere in Connecticut, for river navigation at all times except for the passage of engines and cars. The railroad was also required, as were other railroads, to maintain a tug boat at or near the bridge to assist vessels through the openings.

The section to Middletown was opened in 1870 and extended to Willimantic in 1873. The famous Lyman Viaduct, one of the noteworthy engineering accomplishments of the time, much illustrated in stereoscopes, was on this route. Over this route, subsequently operated between New York and Boston the once-famous White or Ghost train, a train of all-white cars, which is said to have been the inspiration of Kipling's very pleasant story 007. The road suffered much difficulty and had many reorganizations, and was leased in 1882 for 99 years and finally absorbed by the New Haven system by purchase in 1907.

New Haven's sixth and last steam railroad, chronologically, was the N. H. & D. R. R., incorporated in 1868, to connect this city directly with the Naugatuck Railroad at Derby, as a substitute to the existing connection over the New York and New Haven tracks at Devon. The incorporators of the New Haven and Derby Railroad were Cornelius S. Bushnell, Henry Dutton, Nehemiah D. Sperry, Leonard S. Hotchkiss, Benjamin Noyes, Charles Peterson, Nathan H. Sanford. The first president was Henry S. Davison, who was succeeded soon by Morris Tyler. Among the early directors were, in addition to these two, H. P. Frost, N. D. Sperry, Chas. Atwater, Isaac Anderson, Chas. L. English, N. T. Bushnell, Ed. Marble, John H. Leeds, L. W. Sperry, Henry G. Lewis and John B. Hotchkiss. The location was surveyed by Col. M. A. David-

son. A connection was made from the above-mentioned Chapel St. station with the Canal Road which at that time, as has been said, was independently operated, having separated from the New York and New Haven Railroad. The Canal Road agreed to maintain the equipment of the New Haven and Derby in its Water Street Shops. The Derby route extended from "150 feet below the Fair Street Bridge" across what was known as Custom House Square, and through land now occupied by the large "Yellow Building," the General Offices of the New Haven Road. The siding tracks crossing Orange Street immediately north of the present railroad station are thus part of what was the original main line route to Derby.

The City of New Haven purchased \$200,000. of stock and \$225,000. of bonds, and later loaned the road \$75,000. more to pacify its creditors, and a mortgage on the road's property on Water Street was taken by the city. There was much opposition to the new road from other roads and it had a hard time getting started, but in 1871 it opened service to Ansonia. The following quotation from the Derby Transcript of August 11, 1871, is an amusing example of journalism of the period:

Saturday last was a great day for New Haven. Waking up to the fact that her citizens could not visit the metropolis of this part of the State by rail, some of them, including Hon. Morris Tyler, president of the railroad, and also Lieutenant Governor of the State, his Honor, Mayor Lewis, members of the New Haven Common Council, and others, concluded to come and take a look at the same; accordingly they took the cars at Meadow Street, refreshed themselves by passing through the Orange and other groves, and next looked down into the Derby Valley, and from the first stopping were thence carried up to Ansonia, where they had a chance of seeing some of our rare architecture, and partaking of one of our cold collations. These citizens appeared like boys on a frolic, or rather as if just let out of school. The sights of our place, evidently new to their provincial eyes, almost took their breath away; and when they entered our Ansonia Hall, so graciously and gracefully did she open her tasty doors to them, that they all at once fell to laughing, handshaking, speech-making, and the like, until it required almost a gentle violence to detach them from the wonders on which they were feasting their eyes, and dispose them unto some other wonders in the shape of cold drinks and dishes, on which they might delectate their palates. We did not know before that New Haven could be so easily and so greatly delighted. We knew not we had such power to impart pleasure. Our beautiful scenery, beautiful women, fine halls, large mills, crowds of citizens, etc., being a common, every day matter with us, we thought little of it, and this coming forth of these crowds from the rural districts of Elm city, and their evident delight at what they saw, very well illustrates the often observed fact, that man, as such, is very insensible to the good the Gods dispose for him "directly under his nose."

"The editor of the New Haven Journal was obviously a little beside himself. His "record of events" is a little in that vein. He was enraptured by Mr. Chas. Durand's little speech, (who can, by the way, get off half a dozen such before breakfast.) Then Mayor Lewis had to ventilate his delight. Next president Tyler, to tell us how glad he was. Mr. Secretary Garrison, as he always does, had to let off a few telling words, and after him Hon. N. D. Sperry, of Post Office reputation and manipulation. Then he (the said Sperry) had a crack at Mr. Gazette, Norwalk, Bvington, who, in a nice little speech "let 'em know" how good Norwalk clams are; then, finally, Mr. Bartlet, of our own region, had to take these boys all in hand and enlighten them a little, when it was concluded to let them try and find their way back to New Haven again.

"The impression left on our citizens by these visitors from less favored places was, on the whole, not unpleasant. It was the general conviction among us that they might come again. No violence was done, they exhibited no rowdyism or other profane accomplishment, and it is pleasant to think we have allowed these 'outside barbarians' to come and see our civilization. They may—yes—they may come again."

Shortly after the operation started, the management having been as they said "dependent upon the kindness" of the New Haven and Northampton R. R. for the maintenance of equipment, found it necessary, on account of the increase of business, to obtain their own facilities. They therefore filled in some of the New Haven Harbor flats and built their own wharf, establishing the engine house and shops on what is the present site of the Yellow Building, the passenger station being across Meadow Street on the Corner of Water Street, a two-story brick building now a wing of the R. R. Y. M. C. A. In 1888 the road moved the station and built new passenger and freight facilities in what is now the Railroad Y. M. C. A. building, and along Silver Street. The large brick building was moved a few years ago to make room for the new Orange Street broadening arrangement. A new rail connection was subsequently established along West River to the Station at the foot of Meadow Street.

The New Haven and Derby later was leased by the Housatonic Railroad and is now part of the New Haven system, having, with that road, been purchased in 1898. The tracks for the most part have been abandoned, except in New Haven and for a few miles out of Derby, for freight service.

STANDARDIZING TIME

Not the least interesting chapter in New Haven Railroad history lies in the part played by Yale, the New Haven Railroad and the City, in advancing the adoption of Standard Time to avoid the confusion resulting from the maintaining by each local community of its own time, regardless of other communities. Not until November 18, 1883 was national standardization of time finally accomplished, and then not on any formal legislative basis, but merely by the informal action of the "General Time Convention of Railway Managers."^{*} Standard Time was not recognized in any National legislation until 1919!

The idea of standardizing time in Connecticut had been vigorously advanced in 1880 by Professor Leonard Waldo of Yale. On May 1st of that year Mr. Waldo and Mr. George Watrous, president of the rail-

* Although New Haven was a pioneer in efforts to standardize time on other than a local basis, Harvard's Observatory had been for quite a period supplying railroads out of Boston with Cambridge local time. An interesting reference to that service appears in the "Scientific American" of October 27, 1883: "The proposed new standards of time for the railways of the country which are to be established by the General Time Convention of Railroad Managers has received the approval of the Harvard Observatory . . . The consent of Professor E. C. Pickering, the director of the observatory, being necessary, he was met in New York promptly on his arrival from Europe on Sunday . . . and his hearty approval of the scheme was readily given. Accordingly a note has been sent to the Secretary of the Chicago Convention.

road, arranged to impress New York meridian time signals twice each day from the Winchester Observatory at Yale upon the telegraph circuits of the New York, New Haven & Hartford Railroad.

Prof. Waldo pointed out that the logical datum meridian for Connecticut Time was New York City Hall. He wrote in 1880 "By adopting this Standard, Connecticut is in sympathy with the wide expanse of territory between Buffalo and Rhode Island and takes the first step towards dividing the country into larger sections which shall have common standards of time."

There was thus established throughout a large portion of Connecticut, standard time based on New York City time, which was 11 minutes 46.3 seconds slower than Boston time. The City of New Haven immediately adopted this New York meridian time as standard, but Hartford continued to operate under three time standards—New York, Boston and its own time, each of which "controlled a large class of interests."

Prof. Waldo found great difficulty in obtaining adequate financial support for his efforts. During the first year Yale College incurred a debt of \$1,800 in maintaining this service which, wrote Prof. Waldo on Dec. 20th, 1880, was very embarrassing. He pointed out that Yale's "deficit would have been still larger but for the public spirit shown by the New York, New Haven & Hartford Railroad Company and a number of private gentlemen in New Haven."

In 1881 the Connecticut General Assembly progressed the idea of Standard Time in the State by passing a law specifying that: "The Standard of Time for the meridian of the city hall in the City of New York shall be and is hereby made the standard of time for this State." To enable this standard of time to be accurately determined and furnished each day, the Comptroller of the State was authorized to enter into a contract with Yale College at a sum not exceeding two thousand dollars a year, to furnish such time at least once every day, except Sunday, to the New York, New Haven and Hartford Railroad Company, at their depot at New Haven, to be transmitted by telegraph, as railroad business, over its entire line and to other railroad companies in the State.

The idea of National time standard had been gathering strength and in 1883 the General Railroad Time Convention, as has been indicated, agreed upon National Standard Time Zones, reducing the 49 local time bases to five, varying exactly one hour "so that the minute hand of a traveler's watch would not have to be changed however far he might travel." These five zones are, with few exceptions, just what we have to-day. The Convention requested that the Connecticut Law be amended to change the standard meridian for Connecticut from the New York City Hall to the Seventy-fifth meridian west from the Greenwich Observatory in England, which had been chosen as the datum line for Eastern Standard Time. In view of the many advantages of national standards of time, the people of Connecticut were thoroughly cooperative in this movement, and as soon as the legislature next met, the law was modified to specify the seventy-fifth meridian as Connecticut's time.

Early Canadian Rolling Stock

BY ROBERT R. BROWN

One of the things that add zest to historical research is the delightful uncertainty; one carefully prepares an account of an early railway or locomotive and then the almost inevitable subsequent discovery of a more reliable source of information reveals the inaccuracy of the original version. Not long ago I had the painful experience of finding that in Bulletin 39 I had described at considerable length a locomotive that never existed! Much of the spare time of the past fifteen years has been spent compiling locomotive rosters and historical notes on Canadian railways but the results for the period before 1870 were rather poor; the rosters of the smaller roads being particularly hard to check.

In November 1940, Thomas Norrell wrote seeking information on several points, one of them being a Canadian government report, mentioned in the American Railway Times of May 10th 1862, which was supposed to contain lists of all the locomotives in Canada in 1859 and 1860. The matter was referred to the Department of Transport at Ottawa and several days later a parcel arrived by mail and in it a copy of a rare and valuable book, entitled "Board of Railway Commissioners of Canada; Report of Samuel Keefer, Esq.; Inspector of Railways; for the years 1859 and 1860", which the Department had decided to loan to me. It contained information only on the railways of what was then the province of Canada (parts of the present provinces of Ontario and Quebec) and ignored completely the lines in the then separate provinces of New Brunswick and Nova Scotia; there were a number of minor errors; but in spite of its limitations it proved to be one of the most interesting and valuable discoveries in Canadian railroadiana.

The first thought was to simply copy the lists of locomotives and publish them without correction or comment but on second thought it seemed more fitting to compile complete and corrected lists of all the locomotives used in Canada to the end of 1860, using the Keefer list as the principal source of information. The lists are all as at December 31st 1860.

Keefer stated that at the end of 1860 there were 394 locomotives in use in Canada—57 Canadian built, 228 from the U. S. A. and 109 from Great Britain, but in this respect he was inaccurate; even the total quantity was incorrect because he included five engines on the Detroit-Port Huron line, which could not be considered Canadian, and he omitted several others. The following lists, based on a careful checking of all available sources of information, are probably as nearly correct as is possible at this late date.

In addition to the data on the locomotives and cars of each railway, the date of incorporation, termini, distance and date of opening have been included. Also, opposite the name of each road will be found the gauge in 1860 and the initials of the present operating company.

There might be some objection to the use of the Whyte system of classification as it was unknown in 1860 and Keefer gave only the number of driving wheels, but it is used as a matter of convenience and the possibility of error is slight. The symbols (I) and (O) indicate inside or outside connected. There is reason to believe that in most cases the dates indicate when locomotives were put in service and not when built.

ORIGIN OF EARLY CANADIAN LOCOMOTIVES

	<i>Great Britain</i>	<i>U. S. A.</i>	<i>Canada</i>	<i>Total</i>
Province of Canada				
Locomotives in service December 31st 1860				
1. Great Western Railway	44	42	5	91
2. Grand Trunk Railway	50	115	47	212
3. Northern Railway		8	9	17
4. Buffalo and Lake Huron Railway		27	1	28
5. London and Port Stanley Railway		2		2
6. Cobourg and Peterborough Railway		1	3	4
7. Erie and Ontario Railway		1		1
8. Ottawa and Prescott Railway	(#)		5	5
9. Montreal and Champlain Railroad	(#)	3	13	16
10. Carillon and Grenville Railway			2	2
11. St. Lawrence and Industrie Village Railway	(#)	1	1	2
12. Port Hope, Lindsay & Beaverton Railway		3	2	5
13. Welland Railway		3	1	4
14. Brockville and Ottawa Railway		1	2	3
	98	222	72	392
Locomotives scrapped or disposed of prior to 1860				
1. Great Western Railway		2		2
2. Grand Trunk Railway	2		1	3
4. Buffalo and Lake Huron Railway		1		1
7. Erie and Ontario Railway		1		1
8. Ottawa and Prescott Railway	(#)	1		1
9. Montreal and Champlain Railroad	(#)	1		1
	2	6	1	9
Total for Province of Canada				
	100	228	73	401
Provinces of Nova Scotia and New Brunswick				
Albion Mines Railway	(#)	6		6
New Brunswick and Canada Railway		2	5	7
European & North American Railway			8	13
Nova Scotia Railway		14	6	20
Sydney Mines Railway	(#)	2		2
	24	19	5	48
Grand total for British North America				
	124	247	78	449

(#) Indicates standard gauge, 4'8½"; all others broad gauge, 5'6".

BUILDERS OF THE LOCOMOTIVES USED IN CANADA
JULY 1836 TO DECEMBER 31st 1860

Great Britain

Robert Stephenson & Co.,	Newcastle	9
Timothy Hackworth	New Shildon	3
Kinmond, Hutton & Steel	Dundee	5
Peto, Brassey, Betts & Jackson	Birkenhead	53
W. Fairbairn & Co.	Manchester	12
Stothert, Slaughter & Co.	Bristol	20
Jones & Potts	Liverpool	3
R. B. Longridge	Bedlington	1
Rayne & Burn	Newcastle	2
R. Neilson & Co.	Glasgow	14
Unknown		2
		124

United States

Wm. Norris	Philadelphia, Pa.	9
M. W. Baldwin	Philadelphia, Pa.	2
Portland Co.	Portland, Me.	66
Taunton Loco. Works	Taunton, Mass.	5
Amoskeag Manufacturing Co.	Manchester, N. H.	53
Manchester Loco. Works	Manchester, N. H.	11
Lowell Machine Shops	Lowell, Mass.	10
Schenectady Loco. Works	Schenectady, N. Y.	38
John Souther, Globe Works	Boston, Mass.	8
New Jersey Loco. Works	Paterson, N. J.	9
Springfield Car & Engine Co.	Springfield, Mass.	6
H. Hinkley	Boston, Mass.	28
Matfield Manufacturing Co.	East Bridgewater, Mass.	1
Uncertain		1
		247

Province of Canada

James Good	Toronto, U. C.	19
Kinmond Bros.	Montreal, L. C.	12
Ontario Foundry	Kingston, U. C.	22
Dan. C. Gunn	Hamilton, U. C.	16
Grand Trunk Railway	Montreal, L. C.	1
Great Western Railway	Hamilton, U. C.	3
		73

Province of New Brunswick

Fleming & Humbert	Saint John, N. B.	5
Total		449

GREAT WESTERN RAILWAY OF CANADA—(5'6"—C.N.R.)

Incorporated in 1834 as the London and Gore Railway.

Suspension Bridge	Hamilton	Nov. 10th	1853	43 miles
Hamilton	London	Dec. 21st	1853	76
London	Windsor	Jan. 27th	1854	110
Harrisburg	Galt	Aug. 21st	1854	12
Galt	Guelph	Sep. 28th	1857	15
Hamilton	Toronto	Dec. 3rd	1855	38
Komoka	Sarnia	Dec. 27th	1858	51
				345

The Preston-Berlin branch of the Galt and Guelph Railway was abandoned in October 1858, before that road was taken over by the Great Western. It was the first railway abandonment in Canada.

Locomotives:

Due to the loss of most of the early records, the locomotives of the Great Western Railway are the most difficult to trace. The Keefer list differs on many points from the information contained in Bulletin 51 but there are a number of known errors in the Keefer list while on the other hand Mr. Spriggs has made almost a life-time study of this road and his history of the road in Bulletin 51 must be considered authoritative. Keefer's dates in particular are inaccurate so Mr. Spriggs' dates are used in the following list. There are also some differences in the dimensions of cylinders and driving wheels but as these change frequently due to alterations it seems proper to give Keefer's dimensions in the following list for the purposes of comparison.

In Bulletin 51, Mr. Spriggs gave the road numbers of the 1862 series, which are known to be correct, and also the "actual or probable original numbers." It will be noted that the numbers given in the Keefer list do not correspond with either of the series given in Bulletin 51 although it would be natural to expect that the numbers in the Keefer list of 1860 would be the same as the original series of numbers compiled by Mr. Spriggs. This point has been given careful consideration; Mr. Spriggs states that his list of original numbers was based on imperfect records and even conjecture and was almost sure to be wrong but after all it is quite possible that his list of original numbers was correct or nearly so. There is internal evidence in the Keefer list which seems to indicate that it represents a hitherto unknown intermediate series of numbers. How else can we explain the fact that there are no gaps in the Keefer list although we know that two locomotives had already been scrapped?

Pictures of many of these early Great Western locomotives will be found in Bulletins 28 and 51.

1 Hercules	(1) 4-4-0	16x22	72"	1853	?
2 Samson	(1) 4-4-0	16x22	72"	1853	?
3 Canada	(1) 4-4-0	16x22	72"	1853	Lowell #107

4 Niagara
5 Hamilton
6 London

(I) 4-4-0 16x22 72" 1853 Lowell #108
(I) 4-4-0 16x22 72" 1853 Lowell #114
(I) 4-4-0 16x22 72" 1853 Lowell #113

These six engines are a bit of a mystery; Keefer describes them as outside connected but it is practically certain that they were inside connected; on the road they were known as the "Large Schenectady" class although nos. 3 to 6 were built by the Lowell Machine Shops. Keefer states that nos. 1 and 2 were Lowells also but the Lowell records indicate that that was not so. Mr. Spriggs believes that the "Hercules" and "Samson" were built at Schenectady but unfortunately the Schenectady records for that period are not complete. A likely explanation is that all six engines were ordered from the Schenectady Works and the first two were built there but, owing to the pressure of other work, the building of the remaining four was turned over to the Lowell Machine Shops on a sub-contract.

7 Middlesex
8 Lightning
9 Detroit
10 Lincoln
11 Windsor
12 Chatham
13 Paris
14 Woodstock
15 Essex
16 Kent
17 Elgin
18 Norfolk
19 Brant
20 Wentworth
21 Ontario
22 Erie
23 St. Clair
24 Huron
25 Superior
26 St. Lawrence

(I) 4-4-0 15x22 66" 1853 Schenectady #24
(I) 4-4-0 14x22 66" 1853 Schenectady #54
(I) 4-4-0 14x22 66" 1853 Schenectady #55
(I) 4-4-0 14x22 66" 1853 Schenectady #58
(I) 4-4-0 14x22 66" 1853 Schenectady #59
(I) 4-4-0 14x22 66" 1853 Schenectady #90
(I) 4-4-0 14x22 66" 1853 Schenectady #91
(I) 4-4-0 14x22 66" 1853 Schenectady #82
(I) 4-4-0 14x22 66" 1853 Lowell #123
(I) 4-4-0 14x22 66" 1853 Lowell #124
(I) 4-4-0 14x22 66" 1853 Lowell #125
(I) 4-4-0 14x22 66" 1853 Lowell #126
(I) 4-4-0 14x22 66" 1853 Lowell #127
(O) 0-4-0 13x20 54" 1853 Souther
(O) 0-4-0 13x20 54" 1853 Souther

27 Reindeer
28 Elk
29 Gazelle
30 Stag
31 Antelope
32 Greyhound
33 Michigan
34 Simcoe
35 Venus
36 Vesta
37 Minerva
38 Jupiter
39 Mercury
40 Mars
41 Spitfire
42 Firebrand
43 Fire King

(I) 4-4-0 16x21 72" 1853 Amoskeag #128
(I) 4-4-0 16x21 72" 1853 Amoskeag #129
(I) 4-4-0 16x21 72" 1853 Amoskeag #130
(I) 4-4-0 16x21 72" 1853 Amoskeag #131
(I) 4-4-0 16x21 72" 1854 Amoskeag #132
(I) 4-4-0 16x21 72" 1854 Amoskeag #133
(O) 0-4-0 13x20 54" 1854 Souther
(O) 0-4-0 13x20 54" 1854 Souther
(O) 0-4-0 15x22 72" 1853 Norris
(I) 4-4-0 16x21 72" 1855 Fairbairn
(I) 4-4-0 16x21 72" 1855 Fairbairn
(I) 4-4-0 16x21 72" 1855 Fairbairn

These Souther engines were better known under other names and as an entirely different type. When they were altered to standard gauge in 1870 they were changed from 0-4-0 tender engines to 0-4-4 tank engines. The "Huron" as the "Gilson Homan" was probably the best known.

44	Firefly	(I)	4-4-0	16x21	72"	1855	Fairbairn
45	Hecate	(I)	4-4-0	16x21	72"	1855	Fairbairn
46	Hecla	(I)	4-4-0	16x21	72"	1855	Fairbairn

The Fairbairn engines originally were 2-4-0 type but were changed to 4-4-0 type in 1859 and 1860.

47	Atlas	(I)	0-6-0	16x24	60"	1854	Slaughter
48	Pluto	(I)	0-6-0	16x24	60"	1854	Slaughter
49	Milo	(I)	0-6-0	16x24	60"	1854	Slaughter
50	Elephant	(I)	0-6-0	16x24	60"	1854	Slaughter
51	Rhinoceros	(I)	0-6-0	16x24	60"	1854	Slaughter
52	Buffalo	(I)	0-6-0	16x24	60"	1854	Slaughter
53	Bison	(I)	0-6-0	16x24	60"	1854	Slaughter
54	Python	(I)	0-6-0	16x24	60"	1854	Slaughter
55	Welland	(I)	4-4-0	14x22	66"	1854	Schenectady
56	St. Catherines	(I)	4-4-0	14x22	66"	1854	Schenectady
57	Lion	(I)	0-6-0	16x24	60"	1855	Slaughter
58	Lioness	(I)	0-6-0	16x24	60"	1855	Slaughter
59	Tiger	(I)	0-6-0	16x24	60"	1855	Slaughter
60	Tigress	(I)	0-6-0	16x24	60"	1856	Slaughter
61	Leopard	(I)	0-6-0	16x24	60"	1856	Slaughter
62	Panther	(I)	0-6-0	16x24	60"	1856	Slaughter
63	Vulcan	(I)	0-6-0	16x24	60"	1856	Slaughter
64	Etna	(I)	0-6-0	16x24	60"	1856	Slaughter
65	Stromboli	(I)	0-6-0	16x24	60"	1856	Slaughter
66	Styx	(I)	0-6-0	16x24	60"	1856	Slaughter
67	Gem	(I)	4-4-0	16x21	72"	1856	Fairbairn
68	Ruby	(I)	4-4-0	16x21	72"	1856	Fairbairn
69	Emerald	(I)	4-4-0	16x21	72"	1856	Fairbairn
70	Sapphire	(I)	4-4-0	16x21	72"	1856	Fairbairn

These Fairbairn engines also were originally 2-4-0 type and changed to 4-4-0 Type in 1859 and 1860.

71	Mazepa	(O)	4-4-0	15x20	72"	1856	Jones
72	Medea	(O)	4-4-0	15x20	72"	1856	Jones
73	Medusa	(O)	4-4-0	15x20	72"	1856	Jones

Bulletin 51 states that engines 71 to 73 were Birkenheads built by Peto, Brassey, Betts and Jackson and an official list of 1869 also indicates that they were Birkenheads. The Keefer list is the only one showing the name Jones; presumably the firm of Jones and Potts of Liverpool. Probably they were built by Jones and Potts for and from plans of Peto, Brassey, Betts and Jackson, whose works were then busily engaged in building locomotives for the Grand Trunk Railway and fabricating the iron for the Victoria Bridge.

74	Ajax	(O)	4-4-0	16x20	60"	1855	Birkenhead
75	Titan	(O)	4-4-0	16x20	60"	1855	Birkenhead
76	Minos	(O)	4-4-0	16x20	60"	1855	Birkenhead

Probably the Jones and Birkenhead engines originally were 2-4-0 type.

77	Castor	(I)	0-4-0	16x24	60"	1856	Slaughter
78	Pollux	(I)	0-6-0	16x24	60"	1856	Slaughter
79	Erebus	(I)	0-6-0	16x22	60"	1856	Stephenson
80	Cyclops	(I)	0-6-0	16x22	60"	1856	Stephenson
81	Ixion	(I)	0-6-0	16x22	60"	1856	Stephenson
82	Ariel	(I)	2-4-0	15x22	72"	1856	Stephenson #989
83	Oberon	(I)	2-4-0	15x22	72"	1856	Stephenson #990
84	Prospero	(I)	2-4-0	15x22	72"	1856	Stephenson #991

The wheel arrangement of the three Stephenson passenger engines was never changed from 2-4-0.

85	Diadem	(1) 4-4-0 16x21 72"	1857	Fairbairn
86	Diamond	(1) 4-4-0 16x21 72"	1857	Fairbairn
Also originally 2-4-0 type.				
87	Achilles	(1) 0-6-0 16x22 60"	1857	Gunn #4
88	Bacchus	(1) 0-6-0 16x22 60"	1857	Gunn #5

Keefer's list shows that these engines were 7-4-0 type which must have been a typographical error; it is practically certain that they were 0-6-0 type.

89	George Stephenson	(1) 0-6-0 16x24 60"	1860	Great Western #1
90	Scotia	(1) 0-6-0 16x24 60"	1860	Great Western #2
91	Erin	(1) 0-6-0 16x24 60"	1860	Great Western #3

The "Scotia" and "Erin" did not go into service until January and February 1861 but evidently they were so near completion on December 31st 1860 that Keefer included them in his list.

Locomotives Scrapped Prior to 1860:

Oxford	(1) 4-4-0 14x22 66"	1853	Schenectady #23
Chippewa	(1) 4-4-0 14x22 66"	1854	Schenectady #99

The "Oxford" was destroyed on March 12th 1857 in the Desjardins Canal bridge disaster and the "Chippewa" in some unknown accident.

In addition to the regular road engines there were some small and interesting contractor's dinkies. Zerah Colburn, in his "Locomotive Engineering," edition of 1871, states on page 84, "The spreading of the firebox to a width greater than that of the gauge of the line, by placing the firebox entirely behind the wheels, has been carried out by the author in a number of 6 ton tank engines which he designed and made, early in 1852, for a contractor's line of 3 feet 3 inch gauge, that of the permanent way (the Great Western Railway of Canada) being 5 feet 6 inches." These engines were built in the New Jersey Locomotive Works. What final disposition was made of them is not known but they did not remain in Canada.

Other rolling stock:

First class passenger cars,	12 wheels	25
First class	8 wheels	58
Second class	8	44
Baggage	12	10
Baggage	8	10
Box cars	8	860
Box cars	4	100
Vans	8	33
Platform	8	250
Gravel	4	120
Timber	16	6
Timber	4	6
Hand cars		50

GRAND TRUNK RAILWAY OF CANADA—(5'6"—C.N.R.)

St. Lawrence and Atlantic Railroad chartered in 1845; Quebec and Richmond Railway chartered in 1850; Grand Trunk Railway chartered in 1852; in 1853 the amalgamation of the Grand Trunk Railway of Canada East, Toronto and Guelph Railway, St. Lawrence and Atlantic Railroad, Quebec and Richmond Railway, Grand Junction Railway and Grand Trunk Railway of Canada, and lease of Atlantic and St. Lawrence Railroad, under the name Grand Trunk Railway of Canada.

Longueuil	St. Hyacinthe	1847	30 miles
St. Hyacinthe	Sherbrooke	Aug. 1852	66
Sherbrooke	Province Line	Jul. 1853	30
Richmond	Point Levi	Nov. 27th 1854	96
Montreal	Brockville	Nov. 19th 1855	125
Chaudiere Jct.	Montmagny	Dec. 23rd 1855	41
Toronto	Guelph	Jul. 1856	50
Toronto	Oshawa	Aug. 1856	33
Brockville	Oshawa	Oct. 27th 1856	175
Guelph	Stratford	Nov. 17th 1856	39
Stratford	London	Sep. 27th 1858	31
St. Marys	Sarnia	Nov. 21st 1859	70
Victoria Bridge and approaches		Dec. 16th 1859	6
Montmagny	St. Pascal	Dec. 31st 1859	53
St. Pascal	Riviere du Loup	Nov. 10th 1860	25
Kingston Jct.	Kingston	Nov. 10th 1860	2

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Locomotives:

A roster of Grand Trunk locomotives was included in the Company's annual report for 1859 and similar lists as of 1860 appeared in several government reports but in every case the engines were listed by road numbers and the names were not shown. The 1859 list appeared in Bulletin 25. Builders' records usually show the names but not the road numbers. The following list is the first one to be published in which an effort has been made to assign names and builders' numbers to the road numbers. That it contains errors there can be no doubt and it certainly is incomplete as many names are no longer known but it represents the best possible list available now.

It will be noted that a considerable number of Amoskeag engines were received in 1856 and 1857 after the Amoskeag Company had stopped making locomotives.

Pictures of nos. 26, 50, 69 and 209 will be found in Bulletins 18 and 25.

The early Birkenhead engines were of two types, 2-2-2 for passenger service and 2-4-0 for freight service but in their original form they were very unsatisfactory and all but three of them were changed to 4-4-0 type. Nos. 23, 45 and 70 were changed to 4-2-2 type.

Three Grand Trunk locomotives disappeared prior to 1860; two of them were no. 5 "Britannia" and no. 6 "Princess, 2-2-2 type engines built in 1847 by Kinmond of Dundee, Scotland, for the St. Lawrence and Atlantic Railroad. In 1853 they were reported to be completely worn out and not worth repairing.

In 1856 no. 14, a Canadian Kinmond, ran off the track and was lost in the swamp near where the Tureot roundhouse now stands.

In addition to the regular road locomotives, the Portland Company built three for Wood, Black & Co., and these might have been used for a time on the construction of the St. Lawrence and Atlantic Railroad:

Jenny Lind	4-4-0	15x20	66"		1850	Portland	#18
Consuelo	4-4-0	13x20	60"		1852	Portland	#31
William Jackson	4-4-0	15x22	60"		1854	Portland	#62
1 A. N. Morin	(I)	4-4-0	15x22	60"	23½ tons	1848	Portland #3
2 Montreal	(I)	4-4-0	15x22	66"	23¾ tons	1850	Portland #15
3 Sherbrooke	(I)	4-4-0	16x22	66"	23¾ tons	1850	Portland #17
4 St. Lawrence	(I)	4-4-0	15x20	66"	23¾ tons	1851	Portland #25
5	(O)	2-2-2	15x20	72"	23¾ tons	1855	Birkenhead
6	(O)	2-2-2	15x20	72"	23¾ tons	1855	Birkenhead
7 Magog	(I)	4-4-0	16x24	60"	23½ tons	1852	Hinkley #380
8 St. Francis	(I)	4-4-0	16x24	60"	23½ tons	1852	Hinkley #384
9 Richelieu	(I)	4-4-0	15x22	66"	24 tons	1851	Portland #26
10	(I)	4-4-0	14x21	60"	22½ tons	1854	Kinmond #6
11 Coaticook	(I)	4-4-0	16x24	54"	23½ tons	1852	Amoskeag #62
12 Nulhegan	(I)	4-4-0	16x24	54"	23½ tons	1852	Amoskeag #63
13 Manchester	(I)	4-4-0	16x20	66"	23½ tons	1852	Amoskeag #64
14	(O)	4-4-0	16x22	60"	23½ tons	1858	Portland #94
15 St. Hyacinthe	(I)	4-4-0	16x24	54"	23½ tons	1853	Amoskeag #65
16 Upton	(I)	4-4-0	16x20	66"	23½ tons	1853	Amoskeag #66
17	(I)	4-4-0	16x24	66"	26 tons	1853	Kinmond #1
18 Acton	(I)	4-4-0	16x24	54"	25 tons	1853	Amoskeag #67
19 Prince Albert	(I)	4-4-0	16x20	66"	25 tons	1853	Amoskeag #68
20	(I)	4-4-0	15x24	60"	26½ tons	1853	Kinmond #2
21	(I)	4-4-0	16x20	66"	24½ tons	1854	Hinkley #496
22	(I)	4-4-0	16x20	66"	24½ tons	1854	Hinkley #497
23	(O)	2-2-2	15x20	72"	23½ tons	1855	Birkenhead
24	(I)	4-4-0	17x20	60"	24½ tons	1854	Hinkley #498
25	(I)	4-4-0	15x21	66"	28 tons	1854	Kinmond #7
26	(O)	4-4-0	14x22	66"	21 tons	1854	Portland #58
27	(O)	4-4-0	14x20	60"	21 tons	1854	Amoskeag #134
28	(O)	4-4-0	14x20	60"	21 tons	1854	Amoskeag #135
29	(O)	4-4-0	16x24	60"	26½ tons	1854	Kinmond #4
30	(O)	4-4-0	16x24	66"	26 tons	1854	Kinmond #5
31	(O)	4-4-0	16x24	60"	26½ tons	1854	Kinmond #3
32	(O)	4-4-0	16x24	60"	27½ tons	1854	Amoskeag #137
33	(O)	4-4-0	16x24	60"	27½ tons	1854	Amoskeag #136
34	(O)	4-4-0	16x22	66"	26 tons	1854	Good #6
35	(I)	4-4-0	17x20	72"	26½ tons	1854	New Jersey
36	(I)	4-4-0	17x20	72"	26½ tons	1854	New Jersey
37	(O)	4-4-0	16x20	60"	25½ tons	1854	Amoskeag #170
38	(O)	4-4-0	16x20	60"	25½ tons	1854	Amoskeag #171
39	(O)	4-4-0	16x20	60"	25½ tons	1855	Amoskeag #172
40	(O)	4-4-0	16x20	60"	25½ tons	1855	Amoskeag #173
41 Lady Elgin	(O)	2-2-2	15x20	72"	25½ tons	1854	Birkenhead
42	(O)	2-2-2	15x20	72"	25½ tons	1854	Birkenhead
43	(O)	2-2-2	15x20	72"	25½ tons	1855	Birkenhead
44	(O)	2-2-2	15x20	72"	25½ tons	1855	Birkenhead
45	(O)	2-2-2	15x20	72"	25½ tons	1855	Birkenhead
46	(O)	2-4-0	16x20	60"	25½ tons	1855	Birkenhead
47	(O)	2-4-0	16x20	60"	25½ tons	1855	Birkenhead
48	(O)	2-4-0	16x20	60"	25½ tons	1855	Birkenhead
49	(O)	2-4-0	16x20	60"	25½ tons	1856	Birkenhead

50	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
51	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
52	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
53	(I) 4-4-0 17x20 60" 25½ tons 1854	Hinkley #499
54	(O) 4-4-0 15x24 60" 23½ tons 1855	Portland #73
55	(O) 4-4-0 15x24 60" 23½ tons 1856	Portland #74
56	(I) 4-4-0 16x20 60" 24½ tons 1856	Portland #76
57	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
58	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
59	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
60	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
61	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
62	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
63	(O) 4-4-0 16x20 60" 25½ tons 1858	Birkenhead
64	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
65	(O) 2-2-2 15x20 72" 25½ tons 1855	Birkenhead
66	(O) 2-2-2 15x20 72" 25½ tons 1856	Birkenhead
67	(O) 2-2-2 15x20 72" 25½ tons 1855	Birkenhead
68	(I) 4-4-0 16x20 66" 24½ tons 1856	Portland #77
69	(O) 2-2-2 15x20 72" 25½ tons 1855	Birkenhead
70	(O) 2-2-2 15x20 72" 25½ tons 1856	Birkenhead
71	(O) 4-4-0 15x21 66" 28 tons 1856	Kinmond #10
72	(I) 4-4-0 16x20 60" 24½ tons 1856	Portland #83
73	(I) 4-4-0 16x20 60" 24½ tons 1856	Portland #84
74	(O) 2-4-0 i6x20 60" 25½ tons 1856	Birkenhead
75	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
76	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
77	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
78	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
79	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
80	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
81	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
82	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
83	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
84	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
85	(O) 2-4-0 16x20 60" 25½ tons 1856	Birkenhead
86	(O) 4-4-0 15x21 66" 28 tons 1856	Kinmond #11
87	(O) 4-4-0 15x21 66" 28 tons 1856	Kinmond #12
88	(I) 4-4-0 15x20 66" 24 tons 1856	Kingston #1
89	(I) 4-4-0 15x20 66" 24 tons 1856	Kingston #2
90	(I) 4-4-0 15x20 66" 24 tons 1856	Kingston #3
91	(I) 4-4-0 15x20 66" 24 tons 1856	Kingston #4
92	(I) 4-4-0 15x20 66" 24 tons 1856	Kingston #5
93	(I) 4-4-0 15x20 66" 24 tons 1857	Kingston #6
94	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #7
95	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #8
96	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #9
97	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #10
98	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #11
99	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #12
100	(O) 4-4-0 15x20 72" 25½ tons 1856	Manchester #13
101	Montreal (I) 4-4-0 15x22 60" 23½ tons 1848	Portland #2
102	Machigonne (I) 4-4-0 15x22 60" 23½ tons 1848	Portland #5
103	Oxford (I) 4-4-0 15x22 60" 22½ tons 1849	Portland #6
104	Wm. F. Preble (I) 4-4-0 15x20 66" 24½ tons 1849	Portland #8
105	Waterville (I) 4-4-0 15x20 66" 22½ tons 1849	Portland #13
106	Coos (I) 4-4-0 15x20 66" 22½ tons 1850	Portland #14
107	Felton (I) 4-4-0 15x22 60" 22½ tons 1851	Portland #19
108	Railway King (I) 4-4-0 17x22 60" 24½ tons 1851	Portland #20

109	Casco	(I)	4-4-0	14x20	60"	22 $\frac{1}{4}$	tons	1851	Portland	#28
110	Forest City	(I)	4-4-0	15x20	66"	22 $\frac{1}{4}$	tons	1852	Portland	#29
111	Danville	(I)	4-4-0	13x20	60"	20	tons	1852	Portland	#30
112	Falmouth	(I)	4-4-0	14x22	56"	22 $\frac{1}{2}$	tons	1852	Portland	#32
113	Daniel Webster	(I)	4-4-0	15x20	60"	22 $\frac{1}{4}$	tons	1852	Portland	#36
114	Cumberland	(I)	4-4-0	16x22	60"	24 $\frac{1}{4}$	tons	1853	Portland	#40
115	Nulhegan, Re. Mich.	(I)	4-4-0	14x22	66"	21 $\frac{1}{2}$	tons	1853	Portland	#42
116	Paris	(I)	4-4-0	15x22	60"	23 $\frac{1}{2}$	tons	1853	Portland	#43
117	Norway	(I)	4-4-0	16x22	60"	24 $\frac{1}{4}$	tons	1853	Portland	#41
118	Yarmouth	(I)	4-4-0	15x22	60"	24	tons	1853	Portland	#45
119	Amonoosuc	(I)	4-4-0	15x22	60"	24	tons	1853	Portland	#46
120	Gloucester	(I)	4-4-0	15x22	66"	23 $\frac{1}{2}$	tons	1853	Portland	#44
121	Vermont	(O)	4-4-0	16x22	60"	24 $\frac{1}{4}$	tons	1853	Portland	#48
122	Gorham	(I)	4-4-0	14x22	72"	22	tons	1853	Portland	#49
123	J. S. Little	(I)	4-4-0	15x22	72"	23 $\frac{1}{2}$	tons	1853	Portland	#56
124	United States	(O)	4-4-0	15x24	60"	23 $\frac{3}{4}$	tons	1854	Hinkley	#504
125	Canada	(O)	4-4-0	15x24	60"	23 $\frac{3}{4}$	tons	1854	Hinkley	#505
126	Berlin	(I)	4-4-0	15x20	66"	22 $\frac{1}{4}$	tons	1854	Portland	#57
127	Shelburne	(I)	4-4-0	16x20	63"	25 $\frac{1}{2}$	tons	1857	Portland	#85
128	Oxford	(I)	4-4-0	15x22	63"	23 $\frac{3}{4}$	tons	1854	Portland	#50
129	Bethel	(I)	4-4-0	15x22	63"	23 $\frac{3}{4}$	tons	1854	Portland	#61
130	St. John Smith	(I)	4-4-0	14x22	72"	22	tons	1854	Portland	#59
131	Stratford	(I)	4-4-0	14x22	72"	22	tons	1854	Portland	#60
132	Wm. Jackson	(I)	4-4-0	14x20	66"	21	tons	1854	Portland	#62
133		(I)	4-4-0	17x20	60"	24 $\frac{1}{4}$	tons	1854	Hinkley	#527
134		(I)	4-4-0	17x20	66"	24 $\frac{1}{4}$	tons	1854	Hinkley	#528
135	C. E. Barret	(I)	4-4-0	16x20	66"	25 $\frac{1}{4}$	tons	1857	Portland	#86
136	J. M. Wood	(O)	4-4-0	16x20	66"	24 $\frac{1}{4}$	tons	1854	Portland	#67
137	Massawippi	(I)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1852	Portland	#35
138		(O)	4-4-0	16x20	60"	26	tons	1854	Good	#7
139	Yamaska	(I)	4-4-0	15x22	60"	24	tons	1851	Portland	#27
140	Queen	(I)	4-4-0	16x22	60"	24	tons	1852	Portland	#34
141		(O)	4-4-0	16x20	60"	26	tons	1856	Good	#15
142		(I)	4-4-0	17x20	66"	27	tons	1858	Good	#18
143		(O)	4-4-0	16x20	60"	26	tons	1857	Good	#16
144	Minot	(O)	4-4-0	16x22	60"	29 $\frac{1}{4}$	tons	1859	Portland	#103
145		(O)	2-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1856	Birkenhead	
146		(O)	2-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1856	Birkenhead	
147		(O)	4-4-0	16x20	60"	25	tons	1856	Manchester	#31
148		(O)	4-4-0	16x20	60"	25	tons	1856	Manchester	#32
149		(O)	4-4-0	16x20	60"	25	tons	1856	Manchester	#33
150		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
151		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
152		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
153		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
154		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
155		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
156		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
157		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
158		(O)	4-4-0	16x20	60"	25	tons	1857	Amoskeag	
159		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
160		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
161		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
162		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
163		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
164		(O)	4-4-0	16x20	60"	25	tons	1856	Amoskeag	
165	Pownal	(I)	4-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1857	Portland	#87
166	J. B. Brown	(I)	4-4-0	16x20	66"	25 $\frac{1}{2}$	tons	1857	Portland	#88
167		(O)	4-4-0	16x22	60"	29 $\frac{1}{4}$	tons	1858	Portland	#95

168	Ham	(I)	4-4-0	15x21	66"	29 $\frac{3}{4}$	tons	1857	Gunn #1
169	Shem	(I)	4-4-0	15x21	66"	29 $\frac{3}{4}$	tons	1857	Gunn #2
170	Japhet	(I)	4-4-0	15x21	66"	29 $\frac{3}{4}$	tons	1857	Gunn #3
171		(I)	4-4-0	16x22	56"	24	tons	1857	Kingston #7
172		(I)	4-4-0	16x22	56"	24	tons	1857	Kingston #8
173		(I)	4-4-0	16x20	66"	24	tons	1857	Kingston #13
174		(I)	4-4-0	16x20	66"	24	tons	1857	Kingston #14
175		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1857	Amoskeag
176		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1858	Amoskeag
177		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1858	Amoskeag
178		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1858	Amoskeag
179		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1858	Amoskeag
180		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1858	Amoskeag
181		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1859	Amoskeag
182		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1859	Amoskeag
183		(O)	4-4-0	16x24	60"	28 $\frac{1}{4}$	tons	1859	Amoskeag
184		(I)	4-4-0	16x22	60"	24	tons	1859	Kingston #21
185		(I)	4-4-0	16x22	60"	24	tons	1859	Kingston #22
186		(O)	4-4-0	16x20	60"	26	tons	1859	Good
187		(O)	4-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1857	Birkenhead
188		(O)	4-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1857	Birkenhead
189		(O)	4-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1857	Birkenhead
190		(O)	4-4-0	16x20	60"	25 $\frac{1}{2}$	tons	1857	Birkenhead
191		(O)	4-4-0	16x20	60"	26 $\frac{1}{4}$	tons	1857	Birkenhead
192		(O)	4-4-0	16x20	60"	26 $\frac{1}{4}$	tons	1857	Birkenhead
193		(O)	4-4-0	16x20	60"	26 $\frac{1}{4}$	tons	1857	Birkenhead
194		(O)	4-4-0	16x20	60"	26 $\frac{1}{4}$	tons	1857	Birkenhead
195		(I)	4-4-0	15x21	66"	29 $\frac{1}{4}$	tons	1857	Gunn #6
196		(I)	4-4-0	15x21	66"	29 $\frac{1}{4}$	tons	1857	Gunn #7
197		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #8
198		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #9
199		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #10
200		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #11
201		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #12
202		(I)	4-4-0	15 $\frac{1}{2}$ x21	66"	29 $\frac{1}{4}$	tons	1858	Gunn #14
203	Prince	(I)	4-4-0	16x22	56"	24	tons	1857	Kingston #15
204	Florence Nightingale	(I)	4-4-0	16x22	56"	24	tons	1858	Kingston #16
205	Havelock	(I)	4-4-0	16x24	60"	24	tons	1859	Kingston #17
206	James Morton	(I)	4-4-0	16x24	60"	24	tons	1859	Kingston #18
207	James McMaster	(I)	4-4-0	16x20	66"	24	tons	1859	Kingston #19
208	Benson	(I)	4-4-0	16x20	66"	24	tons	1859	Kingston #20
209	Trevithick	(O)	4-4-0	16x24	60"	29	tons	1859	Grand Trunk Ry. #1000
210	Presumpscott	(O)	4-4-0	16x22	60"	25 $\frac{1}{2}$	tons	1860	Portland #106
211		(O)	4-4-0	16x22	60"	25 $\frac{1}{2}$	tons	1860	Portland #107
212		(I)	4-4-0	15x20	66"	29 $\frac{1}{4}$	tons	1860	Gunn #16

Other Rolling Stock:

First class passenger cars.	8 wheels	92
Second class	8	49
Composite	8	2
Baggage	8	58
Box cars	8	1625
Cattle	8	51
Platform	8	1068
Vans	8	34
Gravel	8	107
Gravel	4	26
Snow ploughs		34

NORTHERN RAILWAY OF CANADA—(5'6"—C.N.R.)

Incorporated August 29th 1849 as the Toronto, Simcoe and Lake Huron Union Railroad; changed in 1850 to Ontario, Simcoe and Huron Union Railroad; construction started October 15th 1851; changed in 1858 to Northern Railway of Canada.

Toronto	Aurora	May 16th	1853	29.7
Aurora	Bradford	June 13th	1853	11.5
Bradford	Allandale	Oct. 11th	1853	21.5
Lefroy	Belle Ewart	May 2nd	1854	0.7
Allandale	Collingwood	June 2nd	1855	31.4
Allandale	Barrie	June 10th	1859	1.3
				96.1 miles

Locomotives:

1	Lady Elgin	(I) 4-4-0	14x20	60"	24 $\frac{3}{4}$ tons	1852	Portland	#33
2	Toronto	(O) 4-4-0	16x22	54"	29 $\frac{3}{4}$ tons	1853	Good	#1
3	Josephine	(I) 4-4-0	17x20	72"	29 $\frac{1}{2}$ tons	1853	New Jersey	
4	Huron	(I) 4-4-0	17x20	60"	28 $\frac{3}{4}$ tons	1853	New Jersey	
5	Ontario	(I) 4-4-0	17x20	60"	28 $\frac{3}{4}$ tons	1853	New Jersey	
6	Simcoe	(O) 4-4-0	16x22	54"	32 $\frac{3}{4}$ tons	1853	Good	
7	Collingwood	(I) 4-4-0	17x20	60"	28 $\frac{1}{2}$ tons	1853	New Jersey	
8	Seymour	(I) 4-4-0	17x20	60"	28 $\frac{3}{4}$ tons	1853	New Jersey	
9	Hercules	(I) 0-6-0	18x20	54"	33 $\frac{3}{4}$ tons	1854	Good	
10	Sampson	(I) 0-6-0	18x20	54"	33 $\frac{3}{4}$ tons	1854	Good	

In 1857 the Hercules and Sampson were altered to 4-6-0 type.

11		(O) 4-4-0	16x20	60"	29 $\frac{3}{4}$ tons	1855	Good
12		(I) 4-4-0	17x20	66"	31 $\frac{1}{2}$ tons	1855	Good
13	George Beatty	(I) 0-6-0	18x20	54"	29 $\frac{3}{4}$ tons	1855	Good

In 1857 No. 13 was rebuilt:

14		4-4-0	18x20	66"			
15		(I) 4-4-0	17x20	66"	30 $\frac{3}{4}$ tons	1855	New Jersey
16	J. C. Morrison	(I) 4-4-0	17x20	60"	29 $\frac{1}{2}$ tons	1855	New Jersey
17	Cumberland	(I) 0-6-0	18x20	54"	29 $\frac{3}{4}$ tons	1855	Good

In 1857 No. 17 was rebuilt:

4-4-0 18x20 66"

Pictures of the "Lady Elgin," the "Toronto" and the "Josephine" will be found in Bulletin 25.

The Josephine was one of the most famous of Canadian locomotives and Cyrus Huckett, her driver, was the popular hero of the day as the song "Dandy Cye of the Josephine" attests:

"I dressed myself from top to toe,
And out from Toronto I did go;
My hair all combed so slick and fine
I looked as prim as the Josephine.
My superintendent told me, oh!
I'se the best looking driver in the country, oh!
I looked in the glass and found it so,
Just as Brundel had told me, Oh!"

The cars included 13 first class coaches, 7 second class and 6 baggage cars, all with eight wheels; 108 box cars, 158 platform cars, 7 vans, 1 refrigerator car—the first one in Canada, 16 spar cars to carry pine masts and spars some of which were over 100 feet long. There were also 6 hand cars.

BUFFALO AND LAKE HURON RAILWAY—(5'6"—C.N.R.)

Incorporated in 1852 as the Buffalo, Brantford and Goderich Railway; construction started 1853; name changed to Buffalo and Lake Huron Railway in 1856.

Fort Erie	Paris	Nov. 1st	1856	83.
Paris	Stratford	Dec. 22nd	1856	33.
Stratford	Goderich	June 28th	1858	45.
From temporary terminus to station at East Street, Goderich		May 16th	1860	1.27
				162.27

Locomotives:

1 Goderich	(O) 4-4-0	16x22	66"	23	tons 1856	Schenectady	#52
2 Waterloo	(O) 4-4-0	16x22	72"	23	tons 1856	Schenectady	#53
3 Caledonia	(O) 4-4-0	15x22	66"	23	tons 1856	Schenectady	#67
4 Cayuga	(O) 4-4-0	15x22	66"	23	tons 1856	Schenectady	#86
5 Dunville	(O) 4-4-0	15x22	66"	20	tons 1857	Springfield	
6 Stratford	(O) 4-4-0	15x22	66"	20	tons 1858	Springfield	
7 Victoria	(O) 4-4-0	15x22	66"	20	tons 1856	Springfield	
8 Welland	(O) 4-4-0	15½x22	66"	23	tons 1857	Jas. Good	
9 Huron	(O) 4-4-0	15x22	66"	23	tons 1854	Schenectady	#87

The "Huron" was destroyed in a wreck in 1857.

10 Superior	(O) 4-4-0	16x22	72"	25½	tons 1856	Springfield	
11 Erie	(O) 4-4-0	16x22	60"	23½	tons 1856	Springfield	
12 Haseltine	(I) 4-4-0	16x22	66"	24½	tons 1856	Schenectady	#171
13 Powell	(I) 4-4-0	16x22	66"	24½	tons 1856	Schenectady	#172
14 Brant	(I) 4-4-0	16x22	66"	24½	tons 1856	Schenectady	#175
15 Buffalo	(I) 4-4-0	16x22	66"	24½	tons 1856	Schenectady	#176
16 Michigan	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#182
17 Chicago	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#183
18 Minnesota	(I) 4-4-0	16x22	60"	24½	tons 1857	Schenectady	#178
19 Milwaukee	(I) 4-4-0	16x22	60"	24½	tons 1857	Schenectady	#179
20 Illinois	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#190
21 Wisconsin	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#191
22 Iowa	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#193
23 Saginaw	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#196
24 Paris	(I) 4-4-0	16x22	66"	24½	tons 1857	Schenectady	#197
25 Oxford	(I) 4-4-0	16x22	60"	24½	tons 1857	Schenectady	#200
26 Perth	(I) 4-4-0	16x22	60"	24½	tons 1858	Schenectady	#202
27 Haldimand	(I) 4-4-0	16x22	66"	24½	tons 1858	Schenectady	#204
28 Boxer	(I) 0-4-0	15x20	56"	18½	tons 1857	Hinkley	
29 Growler	(I) 0-4-0	15x20	56"	18½	tons 1857	Hinkley	

The dates indicate in most cases when the engines were put to work.

Other Rolling Stock:

First class passenger cars.	8 wheels	18	Platform.	8 wheels	96
Second class	8	6	Gravel	8	24
Baggage	8	12	Gravel	4	74
Box	8	218	Hand cars		6

LONDON AND PORT STANLEY RAILWAY—(5'6"—L.& P.S.)

Incorporated 1853.

This was the only railway of 1860 to retain its original name until 1941.

London	Port Stanley	Oct. 1st 1856	24. miles
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Locomotives:

1 St. Lawrence	(O) 15x22	66"	38 tons	1856	Schenectady	#140
2 M. Anderson	(O) 15x22	66"	38 tons	1856	Schenectady	#160

Other Rolling Stock:

First class passenger cars, 8 wheels		2
Baggage	8	2
Box	8	28
Platform	8	20
Hand cars		6

COBOURG AND PETERBOROUGH RAILWAY—(5'6"—Abandoned)

Incorporated in 1852; construction started February 9th 1853.

Cobourg	Harwood	May 29 1854	15.
Harwood	Peterborough	Dec. 29 1854	14.3

Locomotives:

Cobourg	(I) 4-4-0	16x20	60"	18	tons	1854	Jas. Good
Peterborough	(I) 4-4-0	16x20	60"	18	tons	1855	Jas. Good
Alma	(O) 4-4-0	16x20	53"	18½	tons	1855	Jas. Good
Gov. Carver	(O) 4-2-0	12x20	60"	12½	tons	1845	Hinkley #51

The "Gov. Carver" was built originally for the Old Colony Railroad; in 1852 it was sold to the Bangor, Oldtown and Milford Railroad where it was altered to broad gauge. It was bought by the Cobourg and Peterborough Railway in 1860.

Other Rolling Stock:

First class passenger car, 8 wheels		1
Baggage	8	1
Box	8	8
Platform	8	56
Gravel	4	17
Hand cars		4

ERIE AND ONTARIO RAILWAY—(5'6"—Michigan Central R. R.)

Incorporated in 1835; opened as a horse-operated line in 1839; rebuilding and re-location for steam operation started in 1852; opened July 3rd 1854.

Queenston	Chippewa	10 miles
Queenston	Niagara-on-the-Lake	7

Locomotives:

Niagara	(I) 4-4-0 16x20 60" 18 tons 1854 Amoskeag
	Probably this was the "Clifton," Amoskeag #169, built for Zimmerman & Balch. Zimmerman was a banker, steamboat owner and railway contractor who lived at Niagara. This first locomotive was disposed of sometime early in 1860 and was replaced, perhaps temporarily, by the following leased engine. There is no record of where the second one came from.
Niagara	(O) 4-4-0 18x20 66" 30 tons 1854 Amoskeag

Other Rolling Stock:

First class passenger cars, 12 wheels	4
Baggage 8 wheels	1
Box 8	1
Platform 8	8
Gravel 4	10
Hand cars	2

OTTAWA AND PRESCOTT RAILWAY—(4'8½"—C.P.R.)

Incorporated in 1850 as the Bytown and Prescott Railway; name changed to Ottawa and Prescott Railway in 1855.

Prescott	Ottawa	Dec.	1854	54. miles
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Locomotives:

1 Oxford	(O) 0-4-0 11½x20 48" 12 tons 1854 Hinkley #516
Kempville	(O) 0-4-0 11½x20 48" 12 tons 1854 Hinkley #515
	The "Kempville" disappeared some time prior to 1860.
2 St. Lawrence	(O) 4-4-0 14x22 56" 18 tons 1854 Hinkley #526
3 Ottawa	(O) 4-4-0 14x22 56" 18 tons 1854 Hinkley #525
4 Bytown	(I) 4-4-0 14x20 66" 18 tons 1854 Hinkley #541
	In 1855 the "Bytown" was changed to "Colonel By."
5 Prescott	(I) 4-4-0 14x20 66" 16 tons 1857 Hinkley

Other Rolling Stock:

First class passenger cars, 8 wheels	6
Second class 8	2
Baggage 8	2
Box 8	47
Platform 8	30
Gravel 4	40
Hand cars	6

MONTREAL AND CHAMPLAIN RAILROAD—(4'8½" & 4'9"—C.N.R.)

Champlain Division

Champlain and St. Lawrence Railroad incorporated Feb. 25th, 1832, construction started May 1835. United with the Montreal and New York Railroad to form the Montreal and Champlain Railroad in 1857.

Lachine Division

Montreal and Lachine Railroad incorporated 1846. United with the Lake St. Louis and Province Line Railroad to form the Montreal and New York Railroad in 1852. The Montreal and New York Railroad united with the Champlain and St. Lawrence Railroad to form the Montreal and Champlain Railroad in 1857.

Caughnawaga Division

Lake St. Louis and Province Line Railroad incorporated June 24th 1847; united with the Montreal and Lachine Railroad to form the Montreal and New York Railroad in 1852.

Champlain Division

Laprairie	St. Johns	July 21st 1836	14.5 miles
St. Johns	Rouses Point	Aug. 16th 1851	22.3
Laprairie Jct.	St. Lambert	Jan. 14th 1852	10.5

Lachine Division

Montreal	Lachine	Nov. 19th 1847	8.
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Caughnawaga Division

Caughnawaga	Province Line	Sep. 20th 1852	32.
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Locomotives:

Champlain Division

Dorchester	(I) 0-4-0 10x16 48"	8 tons 1836 Stephenson	#126
Subsequently altered to 4-2-0 type and sold in 1849 to the St. Lawrence and Industrie Village Railway.			

Jason C. Pierce	(O) 4-4-0 10½x20 46½"	12 tons 1837 Norris	
Sold in 1850 to the St. Lawrence and Industrie Village Railway. Probably originally 4-2-0 type.			

Montreal	(I) 4-4-0 11x16 54"	1847 Baldwin	#265
Sold in 1860, probably to the St. Lawrence and Industrie Village Railway.			

Champlain	(O) 4-4-0 15x22 60"	1847 Norris	
John Molson (O) 4-2-2 14x20 66" 1847 Kinmond, Dundee			

Bought from the Montreal and Lachine Railroad in 1849 and in 1860 altered to 4-4-0 type.

St. Lawrence	(O) 4-4-0 13½x20 60"	1851 Baldwin	#420
Canada (O) 4-4-0 13x26 60" 1851 Norris			

St. Lambert	(I) 4-4-0 14x20 66"	1851 Taunton	#84
St. Helen (I) 4-4-0 14x20 66" 1852 Taunton			

Dorchester	(I) 4-4-0 16x20 60"	1852 Taunton	#103
Laprairie (I) 4-4-0 16x20 60" 1852 Taunton			

The first "Laprairie," described in Bulletin 39, never existed but a possible explanation of this error is the fact that one of the engines sold to the St. Lawrence and Industrie Village Railroad, undoubtedly the "Montreal," was renamed "Laprairie."

Lachine Division

Lachine 4-4-0 (?) 1847
This engine was lost in the Turcot swamp about 1848 and little is known about it; probably it was a Norris.

Montreal (O) 2-2-2 14x20 66" 1847 Kinmond, Dundee
Jas. G. Ferrier (O) 2-2-2 14x20 66" 1847 Kinmond, Dundee
? (O) 2-2-2 14x20 66" 1847 Kinmond, Dundee

These three Kinmond engines arrived in Canada in 1848; they were altered to 4-2-2 type shortly after their arrival and in 1849 the third one was sold to the Champlain and St. Lawrence Railroad and was then named "John Molson."

Caughnawaga Division

Souhegan (O) 4-2-0	10x16 54"	1842 Hinkley	#9
Bought from the Concord Railroad in 1852.			
Caughnawaga (I) 4-4-0	14x20 66"	1853 Amoskeag	#58
New York (I) 4-4-0	14x20 66"	1853 Amoskeag	#59
Hemmingford (O) 4-4-0	13x24 54"	1853 Amoskeag	#81
St. Remi (O) 4-4-0	13x24 54"	1853 Amoskeag	#82

Other Rolling Stock:

First class passenger cars,	8 wheels	11
Second class	8	5
Baggage	8	7
Box	8	93
Platform	8	73
Gravel	4	30
Snow plough		1
Hand cars		10

Marine Department:

Steamboats

Princess Victoria 1836 169x19x10x171
Hull—E. Merritt, Montreal; Engine—Ward Bros., Montreal; Sold 1848.

Prince Albert 1843 175x24x 7x193
First iron steamboat in Canada, hull fabricated in Scotland and assembled by St. Mary's Foundry, Montreal.

Iron Duke 1846 193x25x 9x169
Hull—Wm. Parkyn, Montreal; Engine—Geo. Brush, Montreal.

Iroquois 1853 147x23x 9x216
First steam car ferry; could carry locomotive and three passenger cars.
Hull—A. Cantin, Montreal; Retired in 1867.

Barges

Laprairie 1851
Built by A. Cantin, Montreal.

St. Lambert 1851
Built by A. Cantin, Montreal.

CARILLON AND GRENVILLE RAILWAY—(5'6"—C.N.R.)

Incorporated in 1853 as the Montreal and Bytown Railway and name changed to Carillon and Grenville Railway in 1859. This railway survived as a broad gauge line until 1914.

Locomotives:

1 Ottawa (I) 44-0 15x24 66" 27 tons 1854 Kinmond, Montreal
 2 Grenville (I) 44-0 12x18 57" 17 tons 1859 D. C. Gunn, Hamilton

A picture of the "Grenville" was printed in Bulletins 22 and 25 but in both cases it was incorrectly described as the "Carillon" built by Kinmond. Actually the "Carillon" was a Birkenhead engine bought from the Grand Trunk many years later.

Other Rolling Stock:

First class passenger cars,	8 wheels	2
Second class	8	3
Baggage	8	2
Platform	8	3
Hand car		1

**ST. LAWRENCE AND INDUSTRIE VILLAGE RAILROAD
(4'8½" — C.P.R.)**

Incorporated July 28th 1847

Locomotives:

1 Dorchester (I) 4-2-0 10x16 48" 8 tons 1836 Stephenson
Bought from the Champlain and St. Lawrence Railroad in 1849. #126

2 Jason C. Pierce (O) 4-4-0 10½x20 46½" 12 tons 1837 Norris
Bought from the Champlain and St. Lawrence Railroad in 1850.

In the fall of 1860 the locomotive "Montreal" of the Champlain and St. Lawrence Railroad was bought but, as apparently it was not delivered until the following year, it does not appear in this list.

Other Rolling Stock:

First class passenger cars.	4 wheels	1
Second class	4	3
Baggage	4	2
Box	4	1
Platform	8	2
Gravel	4	12
Hand cars		3

**PORT HOPE, LINDSAY AND BEAVERTON RAILWAY
(5'6"-C.N.R.)**

Peterborough and Port Hope Railway incorporated December 26th 1846; name changed to Port Hope, Lindsay and Beaverton Railway in 1854.

Port Hope	Lindsay	Dec. 30th 1857	43.
Millbrook	Peterborough	Aug. 18th 1858	13.5
			56.5 miles

Locomotives:

1	Hope	(O)	4-6-0	16x22	54"	28	tons	1856	Amoskeag
2	Lindsay	(O)	4-6-0	16x22	54"	28	tons	1856	Amoskeag
3	Clifton	(I)	4-4-0	15x20	60"	22	tons	4-1858	Manchester
4	Havelock	(I)	4-4-0	16x22	60"	26	tons	6-1858	Kingston

PETERBOROUGH BRANCH

1 Queen (1) 4-4-0 16x22 60" 28 tons 1857 Kingston #9

The Peterborough Branch, from Millbrook to Peterborough, was built and operated by Tate and Fowler, the contractors, and was not turned over to the railway company until 1866, at which time the "Queen" became No. 5.

Other Rolling Stock:

First class passenger cars.	8 wheels	4
Baggage cars	8	3
Box cars	8	21
Platform cars	8	58
Gravel cars	4	25
Hand cars		11

WELLAND RAILWAY—(5'6"—C.N.R.)

Port Dalhousie and Thorold Railway incorporated 1853; name changed to Welland Railway in 1857.

According to the Biography of Hon. W. H. Merritt, M. P., page 422, the Welland Railway was completed on October 8th 1858. The later date may indicate the official opening of the road for regular service.

Locomotives:

1	Grantham	4-4-0	12x19	55"	13 tons	1856	Schenectady	#154
2	Chippewa	4-4-0	14½x20	60"	16 tons	1858	Hinkley	
3	Ontario	4-4-0	16x22	60"	24 tons	1858	Hinkley	#657
4	Erie	4-4-0	15½x24	66"	26 tons	1859	D. C. Gunn	

In 1860 the "Erie" was renamed "Amazon."

Other Rolling Stock:

First class passenger cars,	8 wheels	2
Baggage cars	8	1
Box cars	8	75
Platform cars	8	11
Grain cars	4	50
Hand cars		6

BROCKVILLE AND OTTAWA RAILWAY—(5'6"—C.P.R.)

Incorporated 1853.

Brockville	Franktown	1858	36.4	miles
Smiths Falls	Perth	Feb. 17th 1859	11.54	
Franktown	Almonte	Aug. 22nd 1859	14.85	
Brockville tunnel		Dec. 31st 1860	.75	
			63.54	

The tunnel under part of the town of Brockville was the first railway tunnel in Canada.

Locomotives:

1 St. Lawrence	(I) 4-4-0	16x20	60"	30 tons	1858	Kingston	#11
2 Ottawa	(I) 4-4-0	16x20	60"	30 tons	1858	Kingston	#12
3 Tay	(O) 4-4-0	16x22	60"	22 tons	1859	Taunton	

Other Rolling Stock:

First class passenger cars,	8 wheels	.4	1
Second class	8	1	
Baggage	8	2	
Box	8	5	
Platform	8	72	
Hand cars		10	

STANSTEAD, SHEFFORD AND CHAMBLY RAILWAY—(4'8½"—C.N.R.)

Incorporated in 1853.

St. Johns	Farnham	Jan. 1st 1859	13
Farnham	Granby	Dec. 31st 1859	15
			28

This railway was worked by the Montreal and Champlain Railroad and had no rolling stock of its own in 1860.

PETERBOROUGH AND CHEMONG LAKE RAILWAY (5'6"—Abandoned)

Incorporated in 1855.

Peterborough	Saw mills	July 6th 1859	4 miles

This railway was worked by the Cobourg and Peterborough Railway and had no rolling stock of its own.

ALBION MINES RAILWAY—(4'8½"—Acadia Coal Co.)

General Mining Association incorporated 1825; building of the railway started 1836 and completed in 1838.

Samson	0-6-0	15¾x18	48"	17 tons	1838	Hackworth
Hercules	0-6-0	15¾x18	48"	17 tons	1838	Hackworth
John Buddle	0-6-0	15¾x18	48"	17 tons	1838	Hackworth
Vulcan	2-4-0	15x24	60"		1848	Longridge
Albion	0-6-0	15x24	48"	16 tons	1854	Rayne & Burn
Pictou	0-6-0	15x24	48"	16 tons	1854	Rayne & Burn

Additional information will be found in Bulletin 43 and pictures of the "Samson" and "Albion" will be found in Bulletin 41, page 42.

Other Rolling Stock:

Passenger car, 4 wheels 1
Coal wagons, 4 wheels 400

The locomotives "Samson" and "Albion" and the passenger car are still in existence; the engines are at Halifax and the passenger car is well known as the "Nova Scotia coach" and was exhibited outside the Court of Railways at the New York World's Fair in 1939-40.

NEW BRUNSWICK AND CANADA RAILWAY—(5'6"—C.P.R.)

1835, incorporation of the St. Andrews and Quebec Railway.

1847, construction started. 1850, re-incorporation.

1852, construction recommenced. 1856, incorporation of the New Brunswick and Canada Railway.

St. Andrews	Bartlett	Nov.	1847	10.3
Bartlett	Barber's Dam	Oct. 1	1857	23.6
Barber's Dam	Canterbury	Dec.	1858	30.9
				64.8

Locomotives:

Pioneer	0-4-0	1851	Stephenson	
North Star	0-4-0	1851	Stephenson	
Manners-Sutton	4-4-0	12x18	54"	1857 Portland #92
Earl Fitzwilliam	4-4-0	12x18	54"	1857 Portland #93
The Thistle	4-4-0	12x18	54"	1858 Portland #98
The Shamrock	4-4-0	14x22	60"	1858 Portland #101

Another engine, "The Rose," Portland #81, built in 1857, was lost at sea en route from Portland to St. Andrews; it was similar to "The Thistle."

The "North Star" was retired about 1860.

No information available about the other rolling stock.

EUROPEAN AND NORTH AMERICAN RAILWAY—(5'6"—C.N.R.)
Saint John—Shediac Section

1851, incorporation of the European and North American Railway. September 29th 1852, contract between the province of New Brunswick and the European and North American Railway and Peto, Betts and Brassey for the building of the line. August 1853, construction started. 1854, work discontinued. 1856, construction resumed by the provincial government.

Saint John	Moose Path	Mar. 17	1857	3
Pointe du Chene	Moncton	Aug. 19	1857	18.8
Moose Path	Rothesay	June 1	1858	5.8
Rothesay	Hampton	June 8	1859	13.2
Hampton	Sussex	Nov. 10	1859	21.7
Sussex	Moncton	July 18	1860	45.6
				108.1

Locomotives:

1 Hercules	4-4-0	17x20	60"	1854	Hinkley	#535
2 Samson	4-4-0	17x20	60"	1854	Hinkley	#536
3 Saint John	4-4-0	12x18	54"	1854	Portland	#64
4 Kennebecassis	4-4-0			1857	Hinkley	
5 Petitcodiac	4-4-0			1858	Hinkley	
6 Scadouc	4-4-0			1858	Hinkley	
7 Anagance	4-4-0			1858	Hinkley	
8 Loostauk	4-4-0			1858	Fleming	
9 Ossekeag	(O) 4-4-0	15x22	66"	35 tons	1859	Fleming
10 Apoquaui	(O) 4-4-0	15x22	66"	35 tons	1859	Fleming
11 Sussex	4-4-0			1859	Springfield	#3
12 Prince of Wales	(O) 4-4-0	15x22	66"	35 tons	1860	Fleming
13 Norton	(O) 4-4-0	15x22	66"	35 tons	1860	Fleming

No information available about the other rolling stock.

NOVA SCOTIA RAILWAY—(5'6"—C.N.R.)

Provincial government authorized to build railways 1854.

Halifax (Richmond)	Four Mile House	Feb.	1855	4
Four Mile House	Bedford	July	1855	4
Bedford	Grand Lake	Jan.	1857	15
Grand Lake	Elmsdale	Jan.	1858	7
Elmsdale	Shubenacadie	Mar.	1858	9
Shubenacadie	Truro	Dec. 15	1858	22
Windsor Jct.	Windsor	June 3	1858	32
				93

Locomotives:

1 Mayflower	(I) 4-4-0	15x20	60"	22 tons	1854	Matfield	#4
2 Sir Gaspard	(O) 4-2-0T	12x18	60"	15 tons	1855	Neilson	
3 Joseph Howe	(O) 4-2-0T	12x18	60"	15 tons	1855	Neilson	
4 Mary Ann	(O) 0-4-0T	10x18	42"	9 tons	1856	Neilson	
5 Grasshopper	(O) 0-4-0T	10x18	42"	9 tons	1856	Neilson	#387
6	(O) 4-4-0	16x21	60"	25 tons	1856	Neilson	#388
7	(O) 4-4-0	16x21	60"	25 tons	1856	Neilson	#389

8	(O)	44-0	14x22	60"	22	tons	1858	Portland	#80
9	(O)	44-0	16x22	60"	28	tons	1858	Portland	#96
10	(O)	44-0	16x21	60"	28	tons	1858	Neilson	#444
11	(O)	44-0	16x21	60"	28	tons	1858	Neilson	#445
12	(O)	44-0	16x22	60"	28	tons	1858	Portland	#99
13	(O)	44-0	14x22	60"	22	tons	1859	Portland	#102
14	(O)	44-0	16x22	60"	28	tons	1859	Portland	#100
15	(O)	44-0	16x21	60"	28	tons	1858	Neilson	#463
16	(O)	44-0	16x21	60"	28	tons	1858	Neilson	#464
17	(O)	44-0	16x21	60"	28	tons	1859	Neilson	#465
18	(O)	44-0	16x21	60"	28	tons	1859	Neilson	#466
19	(O)	44-0	16x21	60"	28	tons	1859	Neilson	#467
20	(O)	44-0	16x21	60"	28	tons	1859	Neilson	#468

Other Rolling Stock:

First class passenger cars,	8 wheels	10
Second class	8	8
Baggage	8	5
Box	8	4
Platform	8	10
Gravel	4	15

SYDNEY MINES RAILWAY—(4'8½"—Nova Scotia Steel & Coal Co.)

General Mining Association incorporated in 1825; railway built in 1834 and locomotives introduced in 1854.

Locomotives:

Halifax 0-6-0 12x20 60" 1854 Builder unknown
Sydney 0-6-0 12x20 60" 1854 Builder unknown

Other Rolling Stock:

Coal wagons, 4 wheels 170

Your Editor wishes to make a few comments relative to Mr. Brown's contribution. In the first place, the work done by Mr. Keefer in preparing this material in 1860 is of inestimable value. It should be compared with the U. S. List of 1838 and any errors that exist in either can well be forgiven when its entire value is considered. We are glad to reproduce it, together with Mr. Brown's comments.

A word should be said relative to the Amoskeag engines found in this roster without construction numbers. From good sources, it is stated that this company built 232 locomotives. The list of locomotives, which is still preserved, lists only 186, the last being delivered Jan. 1, 1855. If this is true, this leaves 46 locomotives to be accounted for.

It is safe to assume that the company continued to build locomotives through 1855 and probably into 1856, though, curiously enough, the

Manchester Locomotive Works which commenced building locomotives in 1855 built exactly 46 engines between that date and 1857 when they discontinued until 1864. These 46 engines are not the same as some of the Amoskeag engines that appear on the G. T. R. list and some other roads.

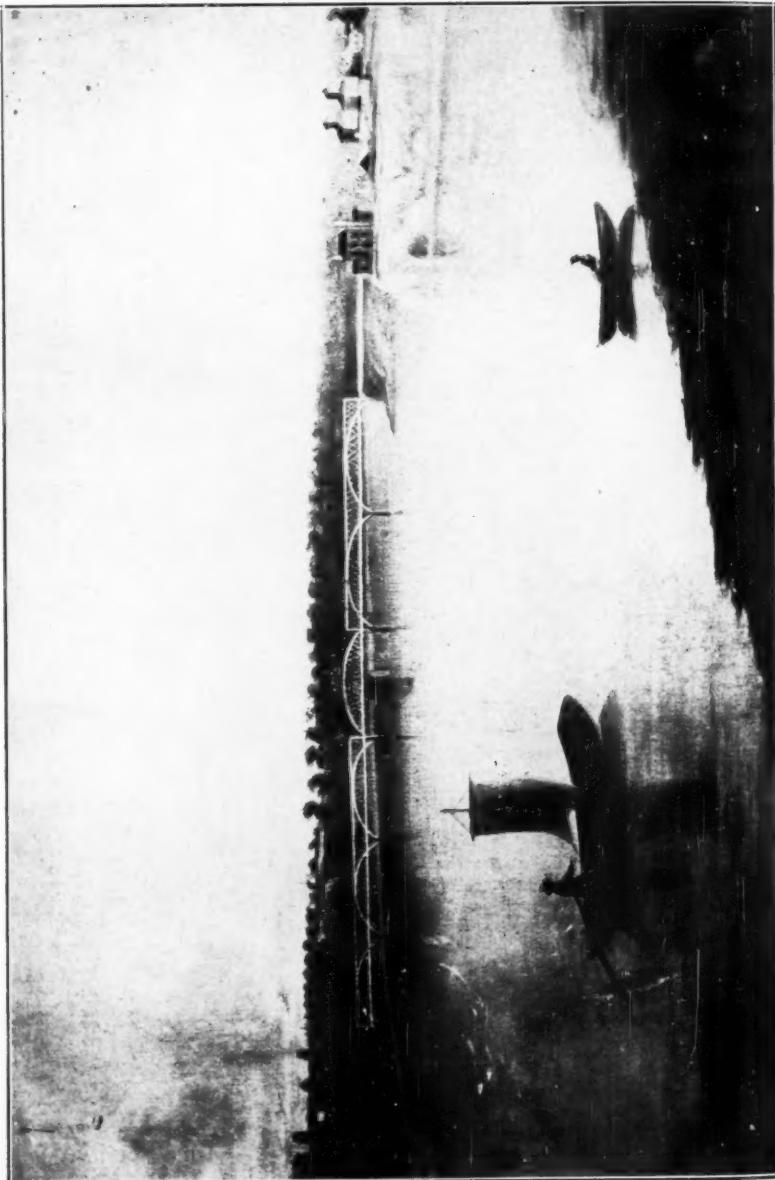
Possibly this number of locomotives built is in error but a lithograph of an Amoskeag locomotive, the "Saturn", clearly shows construction No. 200 on the name plate. Perhaps the best explanation came from Mr. J. Frank Cook, at one time a locomotive engineer on the Concord R. R., who stated that at the time the Amoskeag Co. discontinued building locomotives there were fourteen locomotives on hand and the boiler of another. These were gradually disposed of in the following years and the Concord R. R. finally purchased the boiler and used it in the construction of the "Amoskeag" in 1870. One thing we are certain of, according to Mr. Cook, and that is the Amoskeag Co. ceased to build locomotives in 1856.

With this in mind, and assuming they built as many locomotives in 1855 as they did in 1854, then the number of locomotives constructed—232, cannot be very far wrong. Where they went, the records do not show but those found on the Grand Trunk list without construction numbers are some of this group of missing engines and this word of explanation may not be amiss.

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View of the First Bridge—1856. View is looking upstream, about east by north. Remains of Fort Armstrong at the right. From an old Painting.

The Original Rock Island Bridge Across The Mississippi River

BY FRANK F. FOWLE

PAPER READ BEFORE ROCK ISLAND ROTARY CLUB
AT THEIR MEETING HELD JULY 30th, 1940.

The navigation of western rivers by steam commenced in 1811 and its practicability was well established by 1820. This mode of transportation was the principal means of communication in the Mississippi Valley until the era of railway construction arrived in the decade of 1850-60. Late in 1828 William C. Redfield of New York published a pamphlet of great foresight on a proposed railroad to connect the Hudson and Mississippi rivers. His route followed closely the line of the New York and Erie Railroad as afterward built, thence across Ohio, Indiana and Illinois to the head of navigation on the Illinois river, from that point to the Mississippi river at Rock Island, and then due west to Council Bluffs on the Missouri river. His selection of Rock Island as a point for crossing the Mississippi was deliberate, as he contemplated an advantageous connection with steamboat navigation above the rapids, which impeded the passage of boats in low water.

Redfield's plan attracted wide attention, but he was considerably ahead of his time. No railroad actually reached the Mississippi until 1854. Meanwhile railroads were being constructed extensively in the east, and were constantly being extended westward. Another dreamer presently appeared in the person of Asa Whitney, who in 1848 memorialized Congress on a projected railroad from Lake Michigan to the Pacific Ocean. He published in 1849 a comprehensive report describing his project, which he proposed to finance by means of a Federal land grant of a strip 60 miles wide from the Lake to the Pacific. Congress gave consideration to his proposal and reported a bill to give it effect, but no action resulted. Whitney also was ahead of his time, but his efforts contributed in no small measure to the subsequent action of Congress in ordering official surveys of practicable routes from various points on the Mississippi to the Pacific Ocean.

Whitney did not attempt to select a definite route, but laid out several routes which he considered physically feasible. These are shown on the map in his report. His personal preference was for a route from the southern end of Lake Michigan to the vicinity of the head waters of the Platte river, thence through the South Pass, then following a line around the southern tip of Great Salt Lake, and directly west to San Francisco. Among his reasons for this preference were the climate and fertility of the country traversed, the availability of timber and materials for construction, and the practicability of bridging the streams.

While the government surveys were in progress, railroads were being built westward to Chicago. One of these lines was the Michigan

Southern & Northern Indiana Railroad, completed from Toledo to Chicago in 1852, and today part of the New York Central System. This road was built by Sheffield & Farnam, contractors whose ability and reputation were well established by long experience with canals and railroads in the East. The engineer in charge of construction for the railroad company was John B. Jervis, who was widely recognized as one of the leading men in his profession, and had been responsible for many notable projects, including some of the largest canals, aqueducts and railroads.

These men and the interests associated with them had already visioned a railroad to the Mississippi, thence across Iowa to Council Bluffs, and ultimately across the continent. The story of their connection with the Chicago & Rock Island Railroad, which they built and completed in 1854, was well told by the late Frank J. Nevins, in his article on "Seventy Years of Service", commemorating the seventieth anniversary of the road, in 1922. Their road in Iowa was organized in 1852 as the Mississippi & Missouri Railroad Company and construction was commenced at Davenport in 1853. It was opened to Iowa City in 1856 and completed to Council Bluffs in 1869, the same year that the Union Pacific was completed.

Continuous rail connection across the Mississippi by means of a bridge at Rock Island was imperative. Such an undertaking, however, was then without precedent, and offered unique difficulties both in location and construction. Inasmuch as the state boundary between Illinois and Iowa was in the center of the main channel, half of the bridge necessarily would be in Illinois and half in Iowa. The Mississippi & Missouri Railroad Company was formed under the laws of Iowa with power to construct and operate a railroad from the eastern boundary of the state, at or near Davenport, to a point on the west line of the state at or near Council Bluffs. The general statutes of Iowa gave all railway companies power to carry their respective railways over any river or stream across which they extended. The original Rock Island & LaSalle Railroad Company was given power to construct and operate a railroad from the town of Rock Island to the termination of the Illinois & Michigan Canal on the Illinois River, at Peru. In 1851 its name was changed to the Chicago & Rock Island Railroad Company and it was given power to extend its railroad, via Ottawa and Joliet, to the city of Chicago. There was thus no authority from the state of Illinois to construct a railroad from the shore or western limits of the town of Rock Island to the center of the main channel of the river, including the necessary bridges. This obstacle was removed by incorporating in Illinois in 1853, by act of the Legislature, a company known as the "Railroad Bridge Company", with power—

"to build, maintain and use a railroad bridge over the Mississippi river or that portion within the jurisdiction of the state of Illinois at or near Rock Island in such manner as shall not materially obstruct or interfere with the free navigation of said river and to connect by railroad or otherwise such bridge with any railroad either in the states of Illinois or Iowa terminating at or near said points. . . ."

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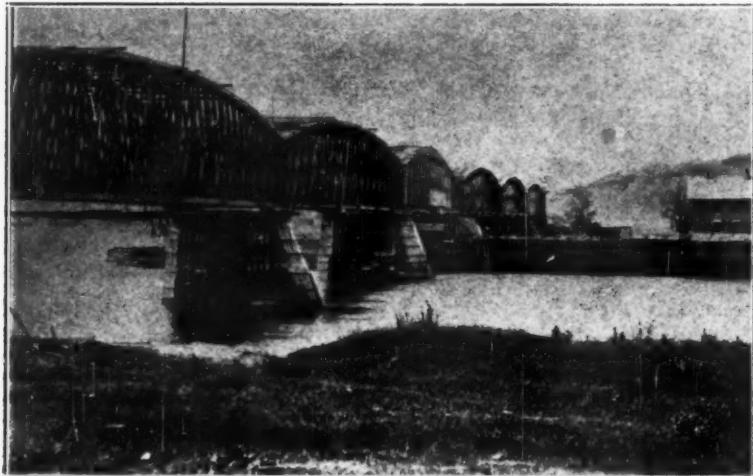
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View of one of the fixed spans and the draw span of the first bridge—from an old photograph.
Note the suspension chains added to reinforce the fixed spans.



View of the Second Bridge—1866. View is from the Island toward the Iowa shore with draw span and its long pier in middle distance. From an old photograph.

The articles of incorporation provided further that the company must commence said bridge within two years and complete the same within six years from the passage of the act. It is interesting to note, in passing, that the Bridge Company continued in existence until Dec. 4, 1926, when it was dissolved by decree of the Circuit Court of Adams County.

The incorporators were Earl A. Matterson, Joseph E. Sheffield, Norman B. Judd and Henry Farnam. The officials of the company were Henry Farnam, President and Chief Engineer, and N. B. Judd, Secretary. John B. Jervis was consulting engineer and B. B. Brayton was the resident engineer in charge of construction. In 1853 the Bridge Company and the Mississippi & Missouri Railroad Company executed an agreement to construct the bridge; the second article in this agreement provided as follows:

"Second. That the location and construction of said bridge, and all contracts and expenditures in connection therewith, shall be under the charge and management and control of Henry Farnam, as Chief Engineer, and that he shall have associated with him John B. Jervis, Esq., as Consulting Engineer, until said parties shall mutually hereafter agree to change this provision."

In 1855 the construction agreement just mentioned was superseded by a tripartite agreement which included the two original parties and the C. & R. I. R. R. Co. The latter agreement provided for the construction of the bridge for the use of the railway companies with the proceeds of the Bridge Company's bonds, which were to be sold to the amount in par value of \$300,000, with guarantee of principal and interest by each of the railway companies; if either guarantor should default, the other by performing the obligations of both should be entitled to exclusive use of the bridge. Subsequently the bonded debt was increased to \$400,000 and ultimately to \$600,000. In 1866 the Illinois and Iowa Companies were consolidated under the name of the Chicago, Rock Island & Pacific Railroad Company, which then became the sole owner of the original bridge.

On December 20th, 1851, John B. Jervis submitted to the Board of Directors of the Chicago & Rock Island Railroad Company a report on the condition and prospects of the road. This report and extracts from the reports of the president, James Grant, and the chief engineer, William Jervis, were published in a pamphlet in September, 1852, in connection with the issue of \$2,000,000 par value of seven per cent mortgage convertible bonds. Included in this pamphlet was a large map showing the Michigan Southern, Northern Indiana, and Chicago & Rock Island Railroads, with their connections from Council Bluffs to New York. This map shows that the route forecast by Redfield over twenty years before was remarkably accurate. Furthermore the route from Chicago to Council Bluffs was substantially the line preferred by Whitney. A writer in Hunt's *Merchants Magazine* for July, 1852, on the subject of "Railroads in the Great Valley," concluded with the following observation:

"Taking the whole of this line, from Rock Island, on the Mississippi, to the city of New York, its peer cannot be found in the United States, nor, as it seems to me, in the world."

There were outstanding advantages in the selection of Rock Island as a preferred location for bridging the Mississippi. These were well expressed by the engineers in the pamphlet of 1852 previously mentioned, from which the following is quoted:

"Whatever may be the ultimate decision of the general government in regard to the different lines and various schemes for a land route to the Pacific, there can be no doubt that the business intercourse between the State and City of New York, and the Valley of the Mississippi, and the Far West, will to a great extent follow the line on the south shores of the lakes to the Mississippi and Missouri, as indicated on the map accompanying this statement. And it is confidently believed that no rival road which will ever be built, can deprive this of the advantages for western business, which the facility for bridging the Mississippi at Rock Island gives it. At this point the navigable channel between the Island and the west shore is 1400 feet wide, with a depth of 6 or 8 feet at low water. The channel on the east side of the island, is only 400 feet wide, with 2 feet depth at low water. The banks are rock bound on both sides, and high above the greatest floods ever known. The whole bed of the river is solid limestone. The approach from the Illinois side is made with a grade of not over ten feet to the mile, and on the Iowa side with a grade of not over thirty feet."

The first comprehensive survey of the Rock Island Rapids was made in 1837 by Lieut. Robert E. Lee of the U. S. Topographical Engineers. This survey was of great assistance to Messrs. Farnam and Jervis in establishing the location of the bridge in 1852. Local soundings and surveys were made under their direction by Ben B. Brayton, and by the following year the exact location had been decided, and they were in readiness to let the contract for the stone piers and abutments. Their plans brought forth vigorous protest from those engaged in navigation of the river, and in 1853 another government survey was made, under the direction of Col. Stephen H. Long, whose map showed the proposed location of the bridge. Although the strongest efforts were made by the government to halt the construction of the bridge by injunction, Judge McLean denied their plea and the work went ahead to completion.

Maps showing the location of the bridge and the connecting link of railroad from the terminus of the C. & R. I. R. R. to the tracks of the M. & M. R. R. in Davenport indicate that the bridge crossed the main channel of the river by the shortest available route. The choice of this exact route undoubtedly represented, in the minds of Farnam and Jervis, a minimum of hazard to the bridge and to navigation, as well as economy in construction costs. The draw span was placed directly over the customary steamboat channel and the deepest water, with two fixed spans on the Illinois side and three on the Iowa side.

During the period of pioneer railroad construction from 1830 to 1850 the bridges were constructed chiefly of timber, on stone piers and abutments. Many of the earliest wooden bridges were built on the plan of Col. Long's truss, patented originally in 1830. This type of truss, although considered excellent in its day, required quite elaborate and

accurate mortising of the vertical posts with the upper and lower chords. In 1840 William Howe of Massachusetts invented an improved truss in which iron rods were substituted for the posts in Long's truss and in 1846 Howe improved his design by the addition of wooden arches. A notable bridge was built on Howe's plan for the Western Railroad of Massachusetts, crossing the Connecticut river at Springfield with seven spans of 180 feet each. This gave great impetus to the use of Howe's truss for railroad bridges and it came into extensive use.

Howe had married into the Stone family and his brothers-in-law, Daniel Stone, Amasa Stone and Andros B. Stone became interested in the Howe patents and engaged in the business of building bridges of his design. They were all men of high integrity, exceptional energy and business ability, and became well known and successful. In 1851 Andros B. Stone and his brother-in-law Lucius B. Boomer came to Chicago and embarked in the bridge business as the firm of Stone & Boomer. The younger brother of Mr. Boomer, Gen. Geo. B. Boomer, was placed in charge of their St. Louis office and their cousin James McClellan Boomer also worked for the firm. These men were well and favorably known to Messrs. Farnam and Jervis, and inasmuch as they held territorial patent rights for the outstanding type of railroad bridge then proven by experience, it was virtually inevitable that Stone & Boomer were given the contract for the superstructure of the Rock Island Bridge. John Warner of Rock Island had already been given the contract for the stone piers and abutments, and he commenced construction on July 16, 1853. Stone & Boomer completed the superstructure on April 22nd, 1856, and the bridge was opened for service.

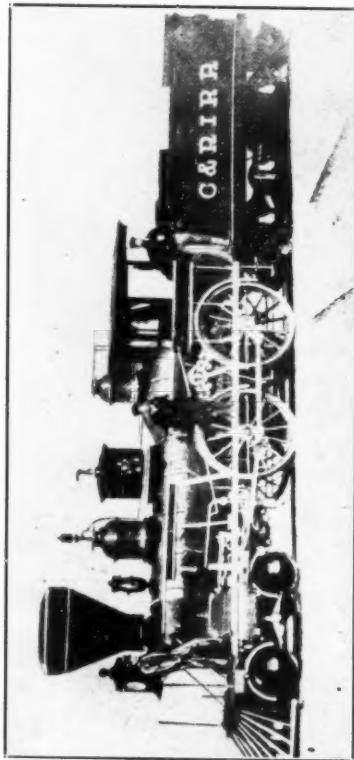
An event so important as the opening of the first bridge across the Mississippi, furnishing a vital link in transcontinental communication by rail, would seem to have called for a great celebration and wide publicity. Nothing of this sort took place, however, and the explanation lies undoubtedly in the unfriendly attitude of both the river interests and the government. The event took place very quietly and there was remarkably little notice of it in the press. In fact no complete plans of the bridge were ever published, as far as known, and remarkably few pictures were made of it. Copies of the plans, specifications and contracts undoubtedly were filed in the general office of the railroad company in the LaSalle Street Station and in the office of Stone & Boomer, in Chicago, but presumably all were destroyed in the Chicago fire of 1871. It also was possible that Mr. Jervis had copies, but recent search of his papers in the Jervis Library at Rome, N. Y., proved fruitless. No other depository suggested itself until it was noted, in the course of reading the report of the board of U. S. Topographical Engineers comprised of Captains A. A. Humphreys, Geo. G. Meade and Wm. B. Franklin, appointed in 1859 to report on the bridge as an obstruction to navigation, that the M. & M. R. R. Co. had given them a set of plans. Inquiry of the U. S. Engineer Corps disclosed that these plans are still on file, and through the courtesy of Maj. Malcolm Elliott a photostatic copy was made available to the author.

The assembly drawing, which shows side elevation, plan, sections, and numerous details, bears the firm name of Stone & Boomer. The title shows that the structure was designed by them, and the name of their draughtsman who made the drawings was M. Lassig. The general design follows the Howe patent, but instead of a single arch in each truss, double arches were used, one on each side of each truss, or four in each span, after the manner of the well-known Burr truss of an earlier period. This however was not a departure in principle from the Howe plan but provided additional strength and rigidity. It is quite interesting to note that the plans call for a covered bridge, but it is virtually certain that the roof was never built, probably on account of the fire risk from locomotive sparks and the obstruction of vision of train crews by smoke.

Many details concerning the construction of the bridge are hidden away in wearisome pages of testimony, briefs and court decisions in the several lawsuits against the owners. Apparently all of the records in the celebrated "Effie Afton" case, in which Abraham Lincoln defended the Railroad Bridge Company, were lost in the Chicago fire of 1871. However the records in Ward vs. Mississippi & Missouri Railroad Company are intact in the files of the U. S. Supreme Court and are of the greatest interest. A fact not generally known is that Edwin M. Stanton argued the case on appeal, for the Railroad Company, in 1862.

There was much interest in England at this time concerning American railroad bridges and numerous dimensions of the Rock Island bridge were published in 1856 in the *Civil Engineer and Architect's Journal* of London, from which the following figures were taken. The main bridge from the island to the Iowa shore consisted of five fixed spans and a swing draw span. Each fixed span was 250 feet in the clear, the draw span was 286 feet, and the total length 1581 feet. The stone piers rested on solid rock and were 38 feet in height from the bed of the river; at the top they were 7 feet wide by 35 feet long, and had a batter of three-fourths of an inch per foot. The upstream face of each pier had a cut-water or starling, to cut the ice as it floated down. The east abutment was 35 feet in height and the west abutment 30 feet, and both were tee abutments. The bottom chords of the trusses were 15 inches deep by 34 inches wide; the top chords were 12 inches deep by 34 inches wide, and both chords consisted of four sticks of timber. There were four arches in each span, 32 inches deep by 10 inches wide, comprised of five timbers 6 by 10 inches. The ends of the arches rested on the piers 13 feet below the chords; at the center the arches rose to the under side of the top chords. There were forty-four diagonal main braces in each truss, running two abreast, and varying gradually from 9x12 inches at the center to 12x12 inches at the extremities. There were twenty-two diagonal counter braces in each truss, bolted to the main braces at the intersections. The center braces were 9x10 inches. There were five iron truss rods at each panel point, three connecting the top and bottom chords and two suspending the truss from the arch; these rods varied gradually in size from 2½ inches diameter at the center of the span to 2¼ inches at the extremities. There were 46 cast-iron bear-

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Locomotive "Antoine LeClair"—first to operate in Iowa. It was originally ferried across the river.

ing blocks, weighing about 400 pounds each, in each truss, 23 at the top chord and 23 at the bottom. Some of these quantities are based on Stone & Boomer's drawing, which shows 22 panels in each fixed span.

The draw span was then the longest in the United States, 286 feet in length, with clear openings of 120 feet on each side of the center pier. This pier was 32 feet in diameter at the top, with the same batter as the other piers; it was protected by a crib 350 feet long and 40 feet wide, extending up and down stream. The upstream end of the pier was faced with boiler iron. The trusses of the draw span were constructed with arched top chords 26 inches wide and having a depth of 36 inches at the center, tapering to 12 inches at the ends. The central portion of each arched chord consisted of twelve pieces of timber, decreasing in steps to four pieces at each extremity. The bottom chords were 26 inches wide and 13 inches deep. The main braces were 9x10 inches at the ends of the truss, gradually lessening to 7x10 inches at the center. The counter braces were 7x9 inches. The truss rods ranged from 2 inches in diameter to 1½ inches and ran three abreast at each panel point. The east-iron bearing blocks were similar to those on the fixed spans and weighed about 130 pounds each. The turn-table track was 28 feet in diameter, with 20 wheels under the draw. Although no mention was made in the foregoing description of the gallows frame over the draw span, it was added to help support the ends of the span when it was swung over the crib to permit steamboats to pass. It can be seen in Stone & Boomer's drawing, which also shows 32 panels in the entire span.

The Slough Bridge, as it was called, crossed what is today known as Sylvan Water, from the island to the left bank. It consisted of three fixed spans of Howe truss, each 150 feet in the clear, and similar in construction to the fixed spans of the main bridge.

Comparatively few pictures of the original bridge can be found, and scarcely any photographs. A weekly illustrated magazine known as *Ballou's Pictorial* carried a wood-cut view of the bridge on the front page of its issue of Dec. 18th, 1858. A view of it appeared also in James' "River Guide," and in several early paintings of Davenport and Fort Armstrong. A lithograph view of Rock Island Prison, during Civil War times, shows the span next to the island and also the Slough Bridge. One of the very few available photographs, obtained through the courtesy of the Free Studio in Davenport, shows the draw span and one of the adjacent fixed spans. This photograph also shows clearly the suspension chains or cables which were added to strengthen the trusses as the weight of locomotives and rolling stock increased with the growth of traffic. It seems probable that the chain cables were added about 1860 or '61.

The original bridge eventually became too light for the traffic and sometime about 1866 it was replaced with a second bridge, constructed on the same piers. The manner in which this was done without erecting falsework in the river and with scarcely any interruption of rail traffic was told by B. B. Brayton in the Half-Century edition of the *Democrat*

in 1922. In the same article he related the visit of Abraham Lincoln to the bridge just prior to the trial of the "Effie Afton" case in Chicago in 1857.

The trusses of the second bridge were built on the Howe plan, with curved or arched top chords, which imparted greater strength without the use of the separate arches employed in the first bridge. The trusses also were deeper than those of the first bridge and heavier in construction throughout. The photographs commonly published as those of the first bridge are in fact views of the second bridge, and they show better than anything else the changes adopted in the construction of the trusses. There seems to be no record as to who designed the second bridge, but it seems likely that the engineers who were responsible for the first bridge were primarily responsible for the second one, or largely so. No detailed plans and specifications of the second bridge are known to exist, and very likely they were lost in the fire which destroyed the LaSalle Street station in 1871.

The original bridge survived three bitterly fought lawsuits, but not without consequences which finally brought about its removal. What could not be accomplished through the courts was finally secured through acts of Congress passed in 1866 and 1867. In 1866 the government decided to occupy the whole of Rock Island for military purposes and establish an arsenal. At that time there were numerous settlers or squatters on the island and the right-of-way of the Chicago & Rock Island Railroad cut across the lower portion of it. In order to clear the island for government use the Secretary of War was directed to negotiate with the railroad company for a new right-of-way across the foot of the island and new bridges across both channels. This resulted in the construction of the double-deck iron bridge, for joint railway and highway use, on the same location as the present steel structure known as the government bridge. The new iron bridge was completed in 1872 and the old wooden bridges were removed. No trace of these original structures remains standing today except a small section of the embankment which approached the abutment on the Iowa shore.

Numerous defects in the location and construction of the original bridge were recited in the report of the board of U. S. Topographical Engineers appointed to examine it in 1859. They found that the bridge was "not only an obstruction to the navigation of the river, but one materially greater than there was any occasion for." The chief cause of criticism was the fact that the piers were not set quite parallel with the current of the river and in consequence created numerous eddies and boils which made navigation difficult. The Iowa side of the draw was in fact unusable for this reason, but the current in the Illinois side was practically parallel with the piers. An enormous amount of controversial testimony on these matters was introduced in the trials of the "Effie Afton" and "Ward" suits.

Other difficulties also arose before the bridge was removed. The piers were not anchored in the rock bed of the main channel with sufficient holding power to resist the thrust of ice floes passing down

stream and on several occasions some of them were pushed out of place, in one instance about 20 feet. On the latter occasion several chords of one of the trusses were broken in consequence. On another occasion, about 1868, a very high wind blew the draw span into the river. Notwithstanding these troubles the two wooden bridges gave service for a period of 16 years. After all this seems a notable tribute to the pioneers who had the courage and determination to build the first bridge across the Mississippi, in the face of so much opposition and risk of ultimate defeat.

It would burden this paper unduly if any attempt were made to enumerate the large number of sources from which original material has been obtained, or to extend thanks to many libraries and individuals who have cheerfully given assistance when asked. In closing, however, there would seem to be special reason on this occasion to acknowledge the valuable historical researches of the late Frank J. Nevins, former Valuation Engineer of the Rock Island, who finally discovered in their files a letter-press copy of the letter of Sept. 4th, 1857, from Norman B. Judd to Abraham Lincoln. This letter establishes the fact that Lincoln visited the bridge on Tuesday, Sept. 1st, 1857, and confirms the story told long ago by Ben Brayton, son of the bridge engineer, who saw and talked with Mr. Lincoln on that memorable day.

The Toronto, Hamilton & Buffalo Railway

By O. P. MAUS

Without losing its identity since the 1880 period, the Toronto, Hamilton and Buffalo Railway has steadily operated along with great success and satisfaction. It has become an interesting road to look upon, having an International feeling about it without which this might never have attained what could be termed as Canada's biggest little railroad. There is not a great deal of history to relate, so therefore we will just have to content ourselves with more of a summary of the building along with a description of the road's make-up as it has arrived to at this time.

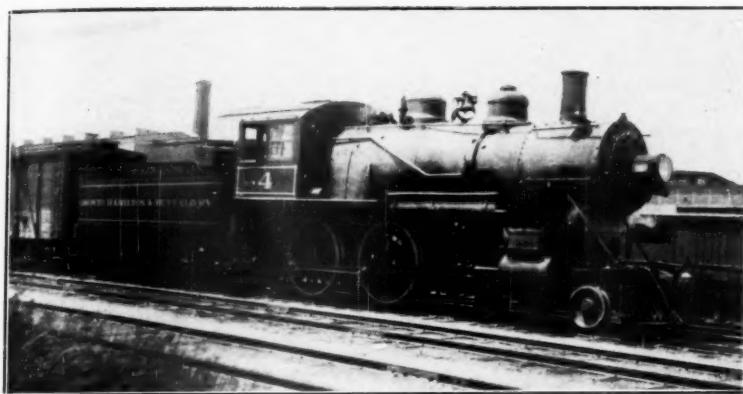
Although incorporated at an early date, the Road remained unbuilt for nearly ten years, and in the meantime saw another Road built and operated which officially led up to becoming the original built portion of the line. Not long afterward the holders of the T. H. & B. charter became stimulated into building their plans and at the same time they merged with this already constructed line.

Finally constructed, although never actually reaching Toronto or Buffalo itself, its importance brought about an outlet for the Canadian Pacific Railway's traffic into the United States through the Buffalo Gateway, and in turn gave the New York Central Railroad a route into Canada with its important business, into the section of this country where it is populated at its heaviest and having the most of the manufacturing industry, serviced through the T. H. & B. Ry. by its connections given by the C. P. Ry. for what developed into a heavy traffic between this section served, and New York and all the main shipping ports of the Eastern and New England States.

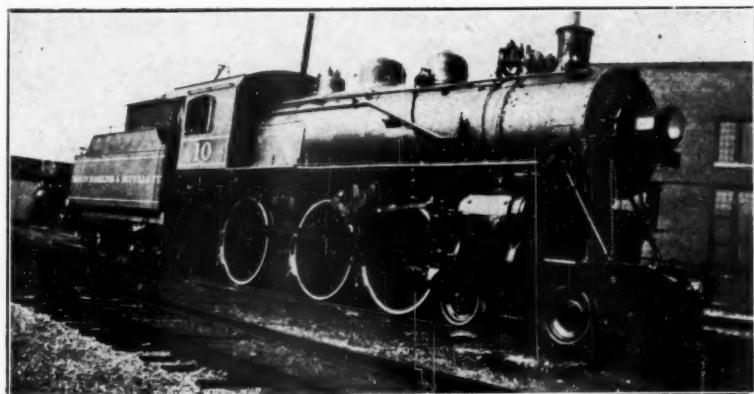
THE BRANTFORD, WATERLOO & LAKE ERIE RAILWAY COMPANY

Repeated efforts to have the Grand Trunk Railway mainline diverted through Brantford having failed, a joint meeting was held in 1881 with the City Council and the Board of Trade for the purpose of considering new railway connections. Decision was made to apply for a charter for the construction of a railway from Port Dover or some point on Lake Erie to Brantford and thence to Toronto. There was much activity promoted in 1883 of the Brantford-Port Dover railway, and by 1884 for more stimulation the Board of Trade was advocating postal service on the railway. Finally a group of citizens of the city entered upon this project in 1884 and applied for a charter; these citizens were A. Watts; R. Henry; J. J. Hawkins; T. Elliott; G. H. Wilkes; H. McK. Wilson, Sheriff Searfe; and S. W. McMichael (Toronto).

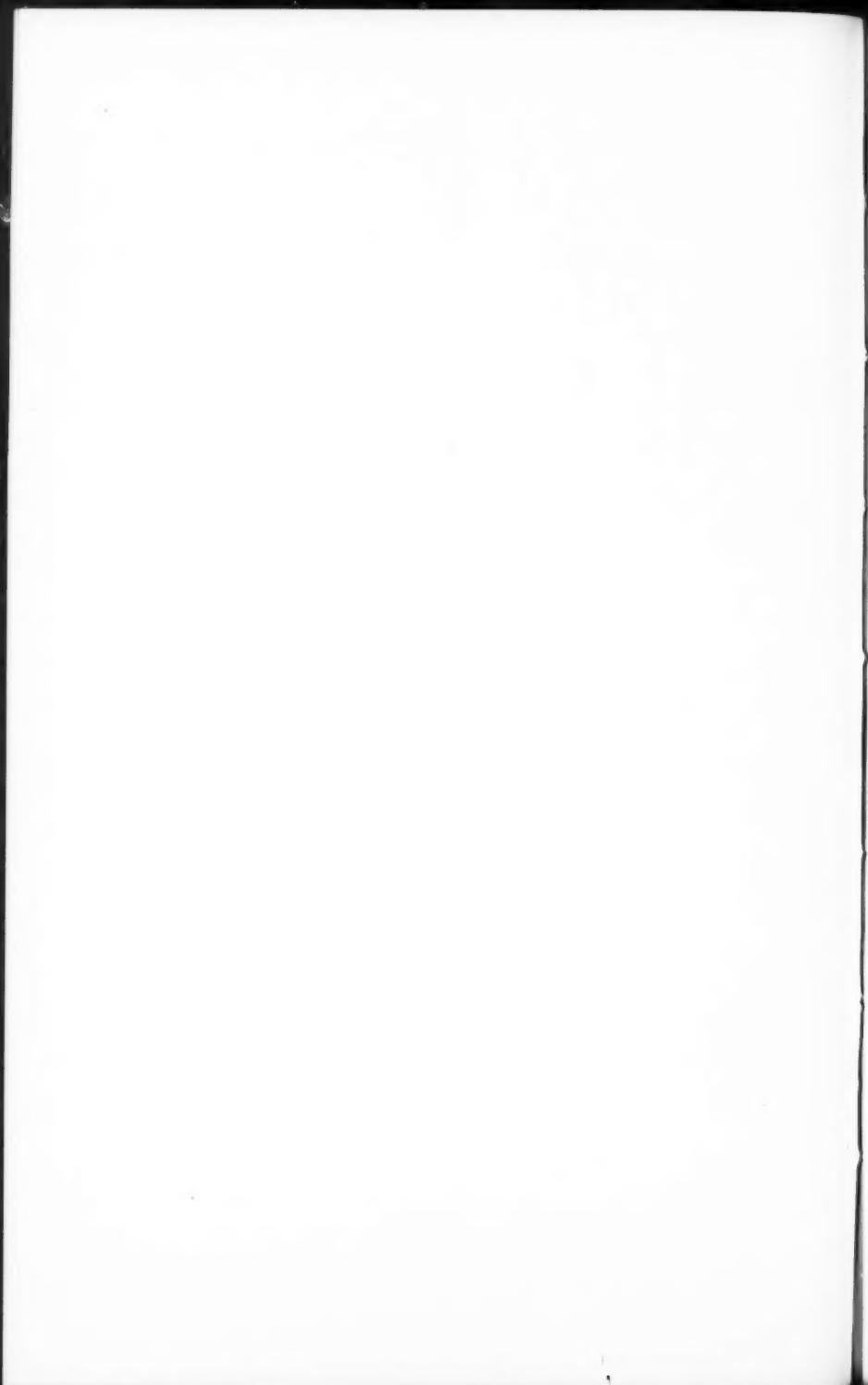
The scheme was launched under the name of THE BRANTFORD, WATERLOO & LAKE ERIE RAILWAY COMPANY, incorporated 1885 by an Act of the Parliament of the Dominion of Canada and power was granted to construct and operate a line of railway from Berlin (renamed Kitchener in 1916), through the City of Brantford to a convenient



T. H. & B. #4, Class C, Baldwin, 1905, at Brantford, July 1, 1932.



T. H. & B. #10, Class F-1, Montreal, 1907, at Hamilton, Oct. 19, 1936.



point in connection with the Canada Southern Railway, thence to a convenient point on or near the shore of Lake Erie. Little was done of building for the time being; then in 1887 a subsidy Brantford to Hagersville or Waterford was received.

Construction of the road was finally carried on during 1888; the road for a considerable time starting from a terminus situated at the then west-most outskirts of West Brantford and built 17 miles to Waterford where it connected with the Canada Southern Railway. The Directors worked hard and successfully in securing a Dominion Government grant of a subsidy per mile together with a bonus of \$25,000 secured from Brantford, and with an additional \$25,000 the City took in stock. The City then drew up a By-Law taking effect July 1-1888 and to issue debentures to the extent of \$50,000 to cover this aid to the Railway Company. None of the debentures were to be delivered until the company had completely bridged and graded so as to be ready for the ties and rails, the whole of the line of the railway from a point near the Grand River in the City of Brantford to the main-line of the Canada Southern Railway at or near the villages of Waterford or Hagersville. The directors having redefined the route, chose Waterford as it was more in a direct line south of the City and making it more convenient for traffic going in either direction upon the C. S. Ry. The City gave the Company two years to complete the road else the debentures would not have gone to the Company.

Starting from a small station at the corner of Oxford (now Colborne West) and Burford Streets, leaving the wide Grand River valley the road set out in a westerly direction for about two miles and following a smaller valley running away from the river, then turning southward in a long graceful bend skirting a high hill, pushing onward with rising gradient to the Village of Mount Pleasant (5 miles); past extensive gravel banks where the road made a gravel pit securing good ballast material, a pit later known as Dick's Pit was sold to a party named John Dick. After passing Churches Station (7½ miles from Brantford) with the gravel banks continuing, the T. H. & B. gravel pits are now located here from which the road has until today secured much material for ballasting, construction and other uses. The Village of Scotland was now reached (at 9½ ml. mark), and then another mile gives leave of Brant County for Norfolk with the line for the remainder of the way bordering much marsh and wood-land; then to Vanessa Station (13 mls.). Now running along the Nanticoke Creek finally sweeping by the large lake-like ponds the Canada Southern Railway was reached, where the Railway made its yards and connections with the Canada Southern's line and yards; the trains then running over the C. S. Ry. rails for a good quarter of a mile to the Waterford station.

Mr. A. J. Nelles was the General Manager, and Messrs. Niham, George Elliott and Battle were the contractors building the road. The offices of the company were located in the Kerby House, which still remains one of Brantford's oldest and yet leading hotels. From the Canada Southern Railway (on Oct. 9, 1903 leased 999 years to the Michigan

Central Railroad, and in 1929 the M. C. leased the C. S. to the New York Central Railroad for 99 years; statistical records show in 1894 the M. C. confirmed agreement dated December 12-1882 reoperation of the C. S. lines of railway) the Company purchased all rail, ties, material and equipment used for the line and much of it was in a rather deplorable condition. Opening of the line was made with the running of an engine and ten flat cars equipped with seats and railings. The line paid very poorly with the rails and equipment being for the most part almost unserviceable. Beyond connecting with the C. S. Ry. it seems no further effort was made to push the line onward to the Lake Erie shores, nor did anything come of extending to Berlin on the North.

The directors carried on for a year and then sold out under certain conditions to Mr. J. N. Young of Chicago. During the time the road was in possession of Mr. Young it was operated under Mr. W. R. Woodward as General Manager.

At one time after Young assumed control of the B. W. & L. E. there appeared somehow a hitch of a kind with regard to the fulfillment of his obligations, and the consequence was from old stories still being told, that an exceptional event took place at the little Brantford depot. Some time before the only train running between the City and Waterford was due to leave on its early morning schedule, the Sheriff, most of the former directors, and some county constables, arrived upon the scene. The ticket-clerk was removed from office and supplanted by another in his stead, while the members of the train crew were also invited to make way for another which had been brought along. The train thus under seizure for debt, headed for the Canada Southern terminal; the passenger list including the directors. But in the meantime it is said, the wires had been quickly used and word was received at the Waterford station that the Brantford train was to be held, the switch was accordingly locked against it. The story goes on to say that the switch became opened in a mysterious manner which was never discovered, and the run back to the City was duly accomplished. Later Young appeared on the scene and the matters were then straightened out.

The motive power of the line consisted of two former Canada Southern Railway engines #314 and #318 which carried the same numbers upon the B. W. & L. E. #314 was a Hinkley built and the #318 Grant, both being 4-4-0 type and having diamond shaped stacks. The #318 was shopped at one time and as the #314 was in so very bad shape and not reliable enough for steady service, C. S. Ry. #316 was then borrowed and used until #318 returned painted red all over and bearing #2 upon it. Officially the #314 then became #1 on the records but #314 was never removed from the engine. Both of these finally went to the Toronto, Hamilton & Buffalo Ry. with #314 being scrapped at Brantford, while #318, or #2 as it really then carried, became TH&B #12.

THE TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY

In 1884 there had been incorporated by an Act of Legislature of the Province of Ontario, THE TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY, to build from Toronto, via Hamilton, to the International Bridge on the Niagara River at Bridgeburg (now Fort Erie). For several years nothing further was made upon this project, until another act was made due to time limits being up, which gave new incorporators and directors. In a further act passed 1890, authority was granted to lease to the Michigan Central Railroad Co., or to Canada Southern Railway Co., but may not lease to certain other companies; and to extend its projected line from or near the City of Hamilton to a point in the County of Brant at or near the City of Brantford, there to connect with the line of the Brantford, Waterloo & Lake Erie Railway Co.; also to extend to Welland, and a bonus was promised from the City of Hamilton. Passed by an Act of Parliament in 1891, the proprietors of the B. W. & L. E. Ry. were allowed to lease to or amalgamate with the T. H. & B. Ry.

From the Brantford end in 1892, Mr. J. N. Young of the B. W. & L. E. Ry. for a bonus of \$70,000 from the City of Brantford offered to bridge the Grand River and have a depot in the centre of the City, also to carry the line as far as Hamilton, until the City considered this bonus but the line would have to be built through to Toronto. The granting of a bonus of this amount was strenuously objected to by the Brantford Board of Trade which passed a resolution opposing this.

However the City of Brantford went ahead and drew a By-Law voted upon by the citizens July 21-1892 and elected to be carried. The By-Law taking effect Sept. 1-1892, authorized amalgamation of the Brantford, Waterloo & Lake Erie Railway with that of the Toronto, Hamilton & Buffalo Railway and this was approved Dec. 16-1892 by an Order of the Privy Council of Canada; with a \$70,000 bonus through which debentures were made to cover the same. Provisions stated that none of the debentures shall be delivered to the Company until the line was completely bridged and graded from the City of Brantford to the City of Toronto by way of the City of Hamilton, and the ties and rail had been laid; the work was to commence not later than Oct. 1-1892 and fully completed to Toronto (following a route roughly about 67 miles) by Dec. 31-1893. A clause also stated that if at any time the road became a part of, or controlled by the Grand Trunk Railway, the amount was to be repaid the City.

The construction of this line was made with great hardships, with work done by hand labor assisted by mule teams. Starting eastward from Brantford the line was built for nearly three miles along the south side of the "Canal," which in older years was used to convey barges and steamboats carrying passengers, freight and grain to and from Buffalo, and lower river points using the Grand River, but due to bad navigation close to Brantford it was necessary to form the canal and raise the boats to a higher level by way of locks, and following the canal

to a landing just below the business district. The coming of railroads in the 1850's shortly put The Grand River Navigation Company out of business and the Canal and the River have not been used for navigation of this sort since.

Crossing the canal where it met the Grand River, the Railway followed the river another half-mile to Cainsville; now leaving the river which sharply turns away, through farm-land the line in five more miles passes out of Brant County into Wentworth to the Village of Jerseyville (at the 10-mile mark), and then on to Summit Station (13½ miles from Brantford). Reaching this point, apparently Mr. Young seems to have become bankrupt or something of that nature, as work was held up for a short time; but as Young had failed to get through in the time specified, he never received a cent from the Corporation of Brantford, although many citizens felt that the obligation should have been met.

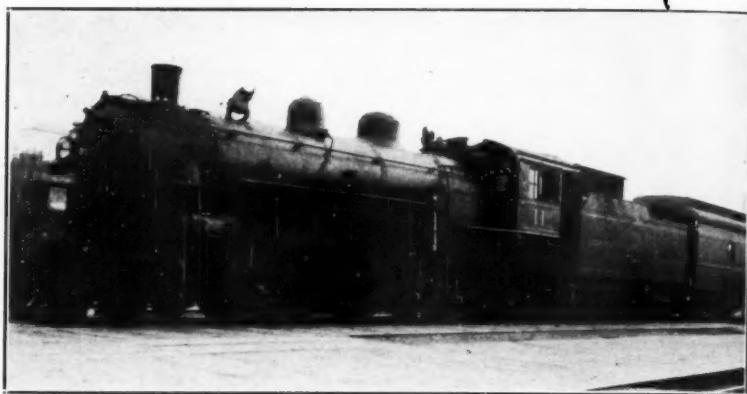
The Grand River at Brantford had been bridged in the summer of 1893 and this connected the B. W. & L. E. with that of the starting point of the new line now being pushed towards Hamilton, this now made it 18 miles to the new station location in Brantford from the Waterford terminal. At this time the line had been fully completed to Starch Works (1½ ml.), just east of the City. Farther east the contractors of the Cainsville-Summit portion of the line were Bracy Brothers of Indiana.

It is regrettable that Mr. Young was forced to sever his work with the line as he was a fine and a most able railroad man and having made his desires for the success of the venture and then having to lose his battle against the heavy odds, for he had later acquired the City's B. W. & L. E. stock of \$25,000 and is understood then to have lost not only his own money but also that of several other Chicago people who gave funds in the enterprise. Later reports state Mr. Young became General Manager of the Dexter & Northern Railway in Indiana, a line later becoming a part of the New York Central.

At this time about the end of 1893, a group of New York and Rochester financiers headed by Mr. J. N. Beckley, afterwards President of the TORONTO, HAMILTON & BUFFALO RAILWAY, took over the road (Mr. Beckley up to the time of his death in 1933, was also head of the General Railways Signal Company of Rochester, N. Y.). The Line now being the T. H. & B. Ry. was built onward from Summit leaving the plateau on the West, descending a very heavy grade twisting and turning through the heavy wooded and rough land of the beautiful Dundas Valley, past Mineral Springs (17 miles from Brantford), on downward to the bottom at Dundas Station (20½ mls.), the station being located some distance outside the Town of Dundas; then completed to as far as Garth Street in Hamilton (24 mls.). The first through train for Waterford left Garth Street on May 24-1895. For some months this was the easterly terminus of the road, a small station being erected on the present site of what is a lubricating company's plant.

(Although the following is not truly part of the history of the T. H. & B. Ry., it might be of interest through the desires made to keep

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T. H. & B. #11, Class K, Montreal, 1913, at Hamilton, Oct. 27, 1932.



T. H. & B. #14, Class C, Baldwin, 1905, leaving Brantford on eastbound passenger train, 1920.

the new road from becoming connected any way with the Grand Trunk Railway. The pushing of the road towards Hamilton was instrumental in the removal of the G. T. Ry. car shops from Brantford. The G. T. R. had previously warned the City that if they built the line to Hamilton which would be in competition with their own line between the two places, they would consider moving their shops out of the city. The road (TH&B) went on, and the G. T. R. made good their promise for in 1897 they had under construction new car shops in London 55 miles to the westward, thus restoring the old shops built in 1874 but burned in 1885 at this point. They moved the big Brantford Shops to their new location, this had resulted in the loss of the biggest concern in the City in the way of employment of that time; (these old shops were about 1900 leased for 99 years as a branch of The Pratt & Letchworth Company of Buffalo, and being now the Malleable Division of the Canadian Car & Foundry Company). About 1899 all locomotive repairs were moved to the new locomotive shops in Stratford 40 miles northwest. While on the subject of the G. T. R. it might also be interesting to mention here that in September 1905 the G. T. R. main-line was finally diverted and completed through Brantford; formerly the line ran through about six or seven miles to the north of the City, and shuttle trains ran to Harrisburg 7½ miles on the east, and to Paris Junction 8 miles on the west side, where they met the main-line trains. This inconvenience had made much toward the success met by the T. H. & B. Line which now gave better service out of the City than through travelling by this other way, and in time the effect of the loss of the G. T. R. railway shops was lost due to the T. H. & B. bringing the path for several firms just as large to locate upon its line.)

During the year 1895 after time extension was allowed, work was in progress digging the long open cut, and the building of the Hunter Street Tunnel in Hamilton being 1903 feet in length, both being completed that year. The line was now also extended from Hamilton to Welland 38 miles.

Leaving from the east end of the new Tunnel just over a mile from the little Garth St. depot, the line follows along at the foot of the Niagara Escarpment (commonly known as "The Mountain") which is a very high bluff separating the higher level of the plain spreading away to the West and Lake Erie side with that of the lower Lake Ontario country-side; the Niagara Gorge cuts through this same bluff. Through Bartonville which is now at the east side of the expanding City of Hamilton, steadily rising for 6½ miles the Village of Stony Creek is reached; then with a heavy grade for 4½ miles along the side of the escarpment with its fine scenery, the top is gained at Vinemount Village (11 miles from Hamilton or the east end of the Tunnel). Thence in a practically straight line over comparatively flat country-side which is an entirely opposite effect from the rugged, hilly country in which the Hamilton District is located; into Lincoln County through villages of Grassies (15 mls.), Smithville (at 20½ ml. mark), St. Anns (23½ mls.), and Silverdale Station (26 mls.). Into Welland County past the Village of Fenwick (31½ mls.), followed by Chantler Station (33½ mls.),

finally reaching Coyle (at 36½ miles). Then nearly another mile the Road joins the Michigan Central Railroad at M. C. R. R. Jet., followed by another half-mile going over the Welland Canal into the Welland M. C. R. R. Station at 38 miles from Hamilton. At Coyle the T. H. & B. made their own terminal and yards.

Here was made the connection with the Michigan Central R. R., and which later gave the desired entry into Buffalo over these M. C. R. R. rails. The line was completed and opened Dec. 30-1895 and the City of Hamilton delivered its debentures in 1896 which were also conditional with regard that the G. T. Ry. Co. was not to be the controlling aided railway company. This Niagara Peninsula, through which the line travels is now one of the finest fruit producing regions of Canada; grapes, peaches and all specimens of fruit are grown in large quantities, and many a "reefer" train leaves this section in season.

A new large depot was at this time constructed at the previously mentioned east end of the Tunnel, or at James Street, and supplanting the old depot location which was not very central in the City of Hamilton. The new large Dundurn engine terminal and shops now being built near where this little old depot stood. The car-shops of the Company later were located at Aberdeen Yards about ¾ mile up the Brantford Line and these still operate on that spot.

The group under Mr. Beckley being interested in the Michigan Central R. R. in which they had considerable holdings gave the operation of the Road to that Company, who operated it for a year (1897) and on December 1st of this (1897) year, the Road reverted to independent operation under Mr. E. Fisher as General Superintendent and still under the original name of THE TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY, the title which has never lost its identity, with headquarters in Hamilton where they have since remained. Previously the Road was managed from St. Thomas or the M. C. R. R. Canadian Division offices, but in 1897 as said, when the head-office of the Company was established in Hamilton, the operating facilities were transferred to that point.

In 1896 the Company negotiated with the Canadian Pacific Railway with the plan of establishing a through train service from Toronto to Buffalo in conjunction with the C. P. R., and T. H. & B., and the M. C. R. R. The Canadian Pacific then entered agreement with and secured trackage rights over the Grand Trunk Railway main-line from Toronto to Hamilton Junction at the city-limits, then using a line of about 1¾ miles to the junction with the T. H. & B. at Dundurn Street. The Toronto, Hamilton & Buffalo Railway built and owns this short section of trackage from Dundurn St. (formerly Garth St.) to the new junction with the Canadian National Railways (then the G. T. Ry.) near the Desjardins Canal; but this section is under long term lease to the Canadian Pacific Railway. The first through passenger train was operated May 30-1897. The C. P. Ry. under this agreement was given use of the Hamilton station, Aberdeen Yards, the Engine-house facilities of the T. H. & B. Ry. This new service proved entirely satisfactory and has

been continued since. The agreement of the C. P. Ry. trackage rights Toronto to Hamilton apparently calls for through passenger service between the two cities, and no local station stops are made thus giving a fast service; however there is a local and a through freight service.

As the road was pushing toward Welland in 1895, a small branch line of about 2½ miles length, known as the Ridgeville Branch, was built; leaving the main-line near Chantler. At Ridgeville was a sand and gravel pit and ballast for line was secured here without the longer haul from the pit near Scotland, almost at the far end of the line to Waterford. Shortly afterward a Nursery located near Pelham Centre, followed by a Canning Factory. However so little traffic was being handled over the Branch in recent years, the line was torn up in 1936. A few years ago press reports stated it was planned to extend this branch about a dozen miles to St. Catharines, but nothing further materialized.

In 1897 the T. H. & B. commenced operations with trackage rights to run freight trains over the Hamilton & Dundas Street Railway into Dundas, and engine #23 was the first to enter the town; on the Waterford line the Dundas Station is south of the Town while the new arrangement allowed them the privilege of getting right into the town for industrial purposes. During March 1898 the H. & D. St. Ry. discontinued their own steam service for electric train operation but this of course had no effect to the T. H. & B. On Sept. 15-1923 the Hamilton & Dundas Electric Street Railway service was entirely abandoned, although the T. H. & B. continued to run over this line until in 1927 the portion of the H. & D. from the T. H. & B.'s junction at West Hamilton to the Town of Dundas was purchased from the owners of the late electric road and the Branch is operated in freight service only.

During the years 1900 and 1901 the Company built THE HAMILTON INDUSTRIAL BELT LINE, now having several miles of trackage, but at the time of construction was well outside the city-limits; it is now running through a thickly populated section of the City. The main industries on the BELT LINE include some of the largest in that City, some of the well known ones being: Canadian Westinghouse Electric; Dominion Foundries & Steel; Procter & Gamble Co. of Canada; International Harvester Co. of Canada; Steel Co. of Canada; Hamilton By-Product Coke Ovens; Canadian Industries Limited; National Steel Car; Firestone Tire & Rubber of Canada; and many, many others. The BELT LINE was one of the most satisfactory constructions the road had made, having since prospered exceedingly and is one of the Company's chief sources of revenue. Hamilton being called the "Pittsburgh of Canada" is the centre of Ontario's steel industry.

Newspaper reports in October 1903 show serious considerations of extending a branch line from Brantford to Woodstock, roughly 25 miles to the west; further press reports gave the idea as subsequently abandoned by December the same year. Other reports in the 1901-1905 period also show nothing done of this consideration although many times the Canadian Pacific Railway talked of building from their line through Woodstock, a branch line to Brantford, then running over the T. H. & B.

to Niagara Falls; many people in Woodstock said they would favor a road like the T. H. & B. there, rather than a big road like the C. P. R.

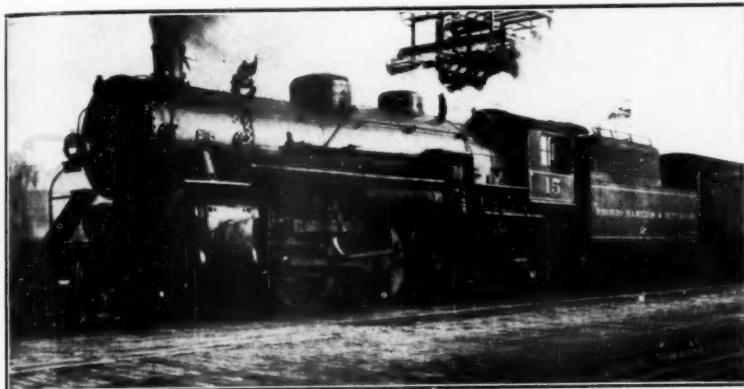
In October 1904 the blacksmith and machine shop of the car-shops at Aberdeen Yards were destroyed by fire with a heavy loss and with several passenger and freight cars burned. During January 1905 new shops were being erected.

Plans were announced April 4-1905 to double-track the line, Hamilton to Brantford, for at the time this division of the road had a very heavy traffic, the passenger trains alone showed 5 trains west and 4 eastbound as compared with a lone gas-electric car run each way today. Then in 1911 the main-line from Hamilton to Stoney Creek was double-tracked, and also out of Coyle westward to Fenwick; since then excepting for these two mentioned sections, the greater portion of the road has remained single-track.

In 1890 there was incorporated The Dunnville & Smithville Junction Railway Company, to build from Dunnville to Smithville. The same year saw also the incorporation of The Dunnville, Attercliffe & Smithville Railway Company, to build from Dunnville, via Attercliffe Station on the Canada Southern Ry. to Smithville. Neither of these projects attained any further moves and they never did have any connections with the T. H. & B. Railway.

THE ERIE & ONTARIO RAILWAY COMPANY

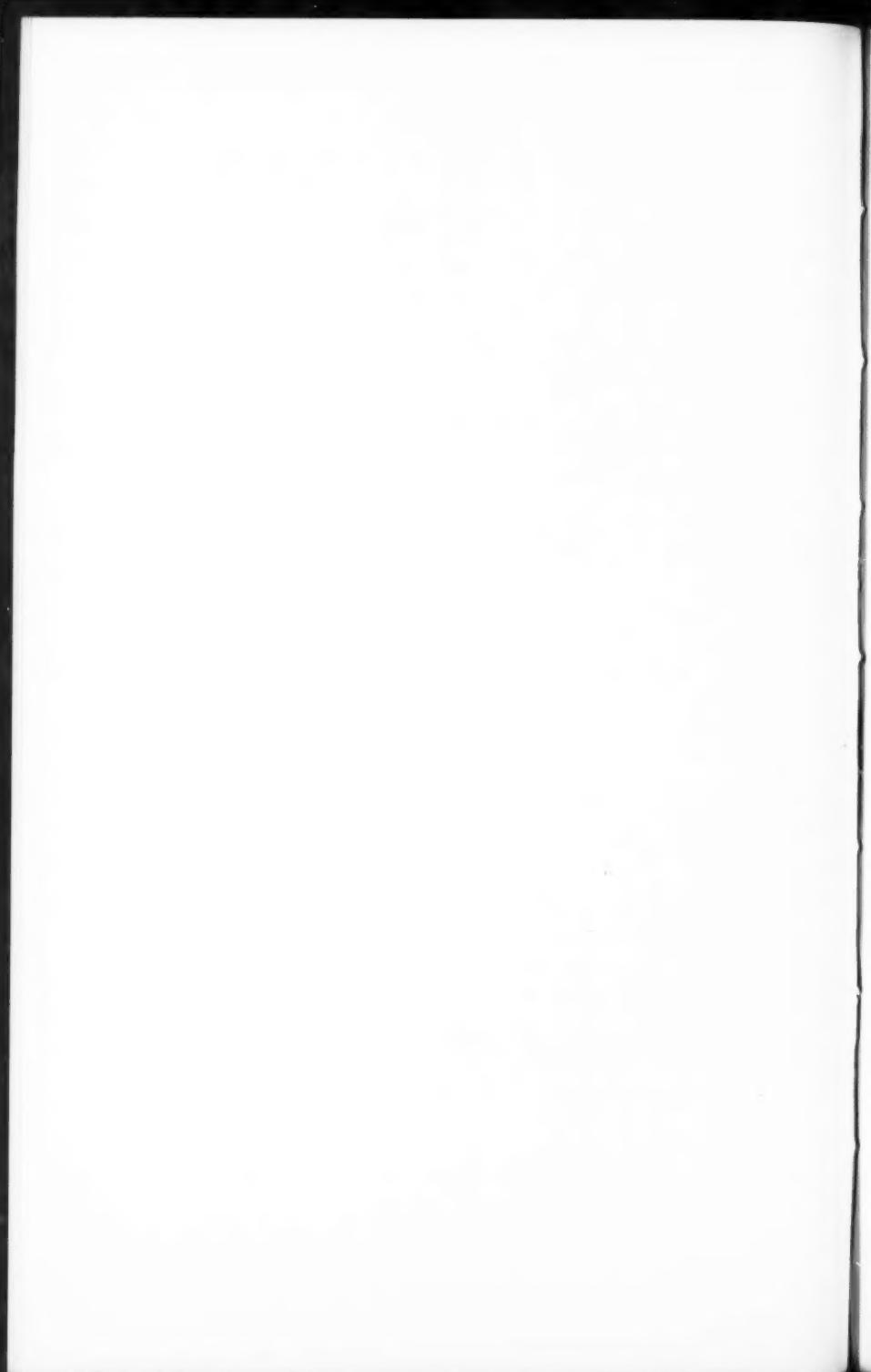
Backed largely by Brantford interests through Lloyd Harris and W. T. Henderson, figuring on obtaining a business to this City from that district and looking forward to a future traffic coming from the Great Lakes, THE ERIE & ONTARIO RAILWAY COMPANY was incorporated 1914 to build from Port Maitland to Smithville, and to Port Colborne. This business was to be handled over the T. H. & B. Ry. to Brantford. Construction was commenced and the line opened during that year. Leaving Smithville located on the T. H. & B. Ry. in Lincoln County over an entirely level countryside passing the station of Vaughan (5 miles), and Port Davidson (7½ mls.). Here the line crossed the Welland River and at the same point the western tip of Welland County being travelled for nearly 2000 feet when Haldimand County is then entered; at 9½ miles is the junction and crossing at E. & O. Junction of the Michigan Central R. R., less than a half mile appears the C. N. Rys.-Wabash Railway crossing, and just past this crossing is Diltz (10 mls.); in another four miles the G. T. Ry. (now C. N. Rys.) is crossed going into the Town of Dunnville situated on the Grand River at its widest point, reached in 15 miles to the Depot. Mentioning the Wabash Railway above has an interesting note. The Wabash in Canada leases trackage rights over the Canadian National Railways, formerly a Grand Trunk Railway line, from Detroit through to Buffalo and to Suspension Bridge, N. Y. This is the line of The Canada Air Line Co. (as in Bulletin #51—page 22—) organized 1870 by the Great Western Railway which went to the G. T. Ry. in 1882; was called Air Line as was



T. H. & B. #15, Class K-1, Montreal, 1923, at Hamilton, Dec. 28, 1932.



T. H. & B. #42, Class B-2, Montreal, 1912, at Brantford, May 21, 1934.



built in an almost straight line across the country and without regard for grades, and is still today commonly referred to as The Air Line.

On December 24-1914 amalgamation was approved of The Erie & Ontario Ry. Co. becoming under the name of The Toronto, Hamilton & Buffalo Ry. Co. In 1916 the line was opened farther on, five miles to Port Maitland. The road on leaving Dunnville follows along the marshy banks of the very broad Grand River to the small village at the wide mouth of the river on Lake Erie. Port Maitland is said to be unquestionably the best natural harbor on the North Shore of the Lake, being well protected and land-locked, entering from a sandy horseshoe-shaped bay. The T. H. & B. Ry. has 2000 acres here suitable for storage, elevator or industrial sites fronting on the river and convenient to both rail and water.

THE TORONTO, HAMILTON & BUFFALO NAVIGATION COMPANY

After the Branch was opened, a Car-Ferry Service was established as a quick means of transporting coal, steel, etc., from Ashtabula, Ohio, into Canada and operating under the name THE TORONTO, HAMILTON & BUFFALO NAVIGATION COMPANY, 230 Park Ave., New York, as owners; incorporated 1916 under laws of the State of Ohio, U. S. A., with all stock owned by the T. H. & B. Ry. Co. This provided a short and fast route for earload freight consignments between Pittsburgh, Youngstown, Cleveland district as well as from all points in Ohio, W. Va., Pa., Md., to Hamilton, Toronto, Brantford and other Canadian points. The car-ferry "Maitland No. 1" has a capacity of 32 loaded freight cars, is a United States boat built at Ecorse, Mich.; it flies the U. S. Flag, although owned in Canada. The Car-Ferry Service was discontinued about 1932 due to lack of business during the "depression" and the opening of the New Welland Canal in 1930 which permitted the carrying of larger cargoes by water directly into Hamilton, Toronto, and other points on water routes. The Car-Ferry although tied up for the present at Ashtabula, is still available for use, if and when business warrants.

THE WELLAND & PORT COLBORNE RAILWAY COMPANY

The T. H. & B. Railway secured a charter to build a line in 1926 between Welland and Port Colborne running parallel to the Niagara, St. Catharines & Toronto Railway, under the incorporation of THE WELLAND & PORT COLBORNE RAILWAY COMPANY, but in lieu of building a new line, secured trackage rights over the Canadian National Railways line between these two places in 1927, and is operated for freight service only. From Welland, passing Welland Junction (2 miles), and Humberstone (6 mls.), Port Colborne is reached after seven miles. In Port Colborne among the important and well known concerns serviced are: the Refinery of the International Nickel Co., the Maple Leaf Milling Co., the Canadian Government Elevator (grain),

Valley Camp Coal Co. of Canada, Canada Furnace, Canada Cement, Humberstone Shoe, and others.

The City of Welland is also a flourishing industrial centre, but the main industries seem to be on the Michigan Central's side of the Welland Canal which services and turns considerable traffic to the T. H. & B. However the T. H. & B's own yard engines out of Coyle switch some of these large concerns also, some being: Page Hersey Tubes, Union Carbide, Plymouth Cordage, Canadian Mead-Morrison.

To Brantford from where the original part of the Road had its beginning, the T. H. & B. became of most great aid, in the manner of competitive freight rates and train service where it was well needed, and bringing many large manufacturing concerns to establish themselves in proximity to the Line; some of them being the largest in the City and among the best known being: Canada Glue; Canadian Durex-Abratives; Cockshutt Plow; Verity Plow; Brantford Coach & Body; Waterous Engine Works; Massey-Harris Farm Implements; Steel Co. of Canada; Universal Cooler of Canada; National Canned Foods, and many others. The multiplicity of Brantford's manufacturing enterprises makes it difficult to pick any one commodity as forming the major part of the freight, although the City has a very large output of agricultural implements and supplies and the Road serves most of these firms; sand, gravel and heavy machinery all have large places in the outgoing columns, but all kinds and classes of goods are well represented, while coal takes up a large share of the incoming freight.

The present passenger stations in Hamilton and Brantford provide the most centrally located of any roads in either of these cities being only three blocks from the main business intersections in each. In both Welland and Waterford the M. C. R. R. stations are used jointly. A new modern and large roundhouse and engine repair shops were constructed in 1928 in Hamilton at Chatham Street, a half-mile west of the old Dundurn Street terminal, and these old ones were then dismantled. Construction was made in 1932 and completed the following year of a new passenger terminal and general office building practically upon the site of the old station in Hamilton, combined with a huge grade separation scheme giving great improvement to that locality of the City and taking the rails away from the level of several very busy streets having heavy vehicle and street-car traffic crossing the railway with its heavy train movements at this section. The new depot is one of the most modern railway stations in Canada today, and also one of the few ultra-modern stations in America. The first train in regular service to use the new station tracks in 1932 was handled by C. P. R. engine #2715.

At present there is the main and larger engine terminal at Hamilton, and engine-houses at Coyle and Dunnville; the Waterford engine-house being dismantled some years ago. Following the B. W. & L. E. Ry. the T. H. & B. never had an engine-house located in Brantford, for only switchers as a rule remained here, the rest of the traffic being through movements.

Automatic block signals were in service in Canada for a number of years prior to their use upon the T. H. & B.; the Road had the honor to introduce for the first time anywhere a new single-track type of signals. The Absolute-Permissive three-position upper quadrant type of automatic block control for single-track operation, was introduced 1911 by the General Railway Signal Company, using this system for the first time in Canada, and also on the American Continent (See Bulletin #44 page 79, Development of Railway Signalling). This system not only provides the maximum safety, but enables the company to handle a very much heavier tonnage over its line than it otherwise would have been able. They were first used on the Railway between Hamilton and Vinemount, and later were extended from Vinemount to Welland, and from Hamilton to Brantford. The system has proved most successful due greatly to there being two heavy grades to climb in order to move out of Hamilton in either direction; between Hamilton Station and Vinemount on the Welland Subdivision, in 11 miles the road climbs to over 300 feet, while from Aberdeen Yards to Summit on the Waterford Subdivision, in 10 miles sees the road up over 400 feet with extensive and considerable curvature, thus the block signals show their performance on these sections, with the allowance of a Permissive Block where the going has become quite hard, meaning of course that at such a signal when it may show 'red', that a train may proceed past the signal without stopping but must be prepared to stop immediately if the track is shown or found to be occupied, then the meaning of Absolute Block is that the train must stop and not pass the signal until the track is known to be clear. On these two sections practically every freight needs a pilot or pusher engine up the 'Hill.' The Hamilton-Brantford section, with traffic density decreasing account of the "Depression" conditions, caused the Road to discontinue and dismantle this stretch in 1932 from Brantford to the approach signal to Aberdeen Yards, which is really at Ranges.

In all the Company's history it has never had a passenger killed while travelling upon the line, truly a remarkable safety achievement held by few other busy roads.

Dating back to the 1897 period, by ownership of stock, The Toronto, Hamilton & Buffalo Ry. Co. is jointly controlled by The New York Central R. R. Co. and the Canadian Pacific Ry. Co. The Annual Report for 1937 shows that the total road mileage operated during that year was 111.03. Made up of 79.88 miles of main-line, 23.74 miles of branches, and 7.41 miles of line operated under trackage rights. Second track total 15.65 miles, and sidings and spurs total 134 miles, making a total track mileage of 260.68. Hardly any changes have been made noticeable in the mileage throughout recent years, and practically no change is called for at this present date. For the amount of equipment owned on the line, this is said to form the heaviest equipped line, per mile of track, in Canada.

The road is divided into Subdivisions, and spurs—or can be called branches—Welland Subdivision—Welland to Hamilton 37.57 miles; Dunnville Subdivision—Smithville to Port Maitland 19.36 miles;

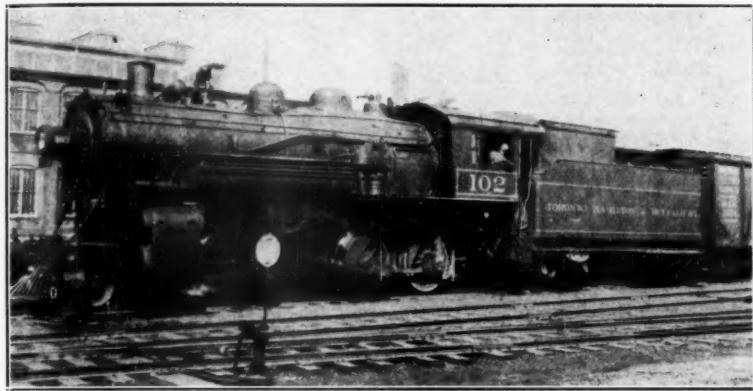
Hamilton Terminals—Wentworth St. to Hamilton (Station) 1.09; to Main St. Jet. 1.25; to Aberdeen Yards .52; to Ranges 1.50—totalling 4.36 miles; Waterford Subdivision—Hamilton (via Main St. Jet.) to Waterford 43.00 miles; Dunnville Station Spur on Dunnville Sub.; Ridgeville Spur on Welland Sub. (now pulled up); Belt Line at Hamilton; Dundas Spur on Waterford Subdivision.

Direct freight connections are made with the following roads and their junction points—The Canadian National, at Brantford and Hamilton; Canadian Pacific, at Aberdeen (Hamilton); Lake Erie & Northern, at Brantford; Michigan Central (now N. Y. C.), at Coyle, E. & O. Jet., Waterford and Welland; and Hamilton Street Railway's switching service, at Hamilton on the Belt Line. Until 1931 when abandoned, the former Hamilton, Grimsby & Beamsville Electric Ry. made connections at Kinnear Jet. (Hamilton) and much fruit traffic used to be secured at this point during fruit season.

Railway Express Agency, and The Pullman Company operate over the Line. The President at this time is Frederick E. Williamson, New York (NYC); Vice-President, Sir Edward Beatty G. B. E., Montreal (CPR); and the Vice-President and General Manager, Harold T. Malcolmson, Hamilton (TH&B); W. J. Warnick, Hamilton (TH&B), is Superintendent. Pullman cars operate out of Toronto and Hamilton each day, directly to New York, Boston, Pittsburgh, Cleveland and Cincinnati over the N. Y. C., and to Philadelphia over the Pennsylvania R. R. Many parlor, diner-lounge cars and coaches operate through to New York also on day trains.

The Toronto, Hamilton & Buffalo Railway is the link connecting the two great systems—the New York Central with the Canadian Pacific. Its through trains arrive at and depart from the Union Station, Toronto, in connection with the Canadian Pacific Railway, and arrive at and depart from the New York Central Railroad Central Terminal, Buffalo, in connection with the New York Central, Michigan Central, West Shore, and Pennsylvania System, which all jointly use the N. Y. C. Central Terminal. The other Railway Stations in Buffalo are, however, easy of access by a connecting Bus service. Toronto (Union Sta.) to Buffalo (Cent. Term.) is but 116 miles and covered in 2 hours and 50 minutes by the faster trains; although is not particularly very fast, gives an average of better than 40 miles per hour, but the slower time is mostly caused by the running through the long and extensive terminal districts of Toronto, Hamilton, and Buffalo, with a stop for custom inspection coupled with a slow crawl across the International Bridge between Fort Erie and Black Rock, at the border; then the very heavy climb out of Hamilton to Vinemount cuts down the speed very greatly.

Of interest to us accustomed to seeing crews operating a train 125 miles to 200 or more miles without a change, here is feature, showing crew changes, crews running over other roads and 'foreign' crews operating upon the road we all talking about. The solid passenger train itself including the engine runs right through the full 116 miles; C. P. Ry. engine and train crews handle all trains between Hamilton



T. H. & B. #102, Class G, Montreal, 1910, on Way Freight at Brantford, May 30, 1937.



T. H. & B. #106, Class G, Montreal, 1910, at Brantford, Jan. 5, 1938.



and Toronto but 40 miles, to Welland 38 miles over the T. H. & B. and on to Buffalo another 38 miles over the M. C. R. R. both T. H. & B. and M. C. entire crews handle through, Hamilton to Buffalo. The Montrose freights from Hamilton to Welland and Montrose (Niagara Falls, Ont.) Yards, are also divided into so many months each with T. H. & B. and M. C. crews.

In this through Toronto-Hamilton-Buffalo service there are 22 passenger service cars in a 3-way joint service, with the T. H. & B. having a 34.23% interest in them. These cars are all heavy steel, #50-55 Baggage-Express; #70-75 Smokers with Leather Seats; #80-89 Coachcs with Plush Seats. In more recent times the 70-75 series are no longer Smokers, having been modernized with air-conditioning and individual seats installed; while a few of the 80-89 series are now also modernized, most of them air-conditioned also. These joint cars have an interesting touch to note, they carry Toronto Hamilton & Buffalo Line across the top of the car, while in smaller letters on the sides beneath the window-level and in the centre of the car appear the names of the three railroads or owners—Canadian Pacific, Toronto, Hamilton & Buffalo, New York Central—all in this order (this latter name recently being changed from Michigan Central). For its own use the T. H. & B. had many passenger cars of various types and since they were all of wooden construction they could not be used off the line in recent years, now since the road has little passenger work that the Gas-Electric Coach cannot handle, and with the Dunnville Branch passenger trains cut off, all the old passengers cars were withdrawn and most are now in maintenance of way service in various capacities, except for four cars kept for use in case the Motor Coach is out of service for repairs and steam is used. One of the four cars however, is a business car "Hamilton" and all-steel; the others are two passenger coaches and one combination passenger-baggage car.

Other equipment is made up of 850 freight cars of various types, Oct. 1938 listing mostly box, stock, gondola, Hart-Convertible, hopper and flat; and about 55 cars in company service. At one time some years ago over 1450 cars were in use in freight service, but as years went by many of them were dismantled, and others, mostly flat and box cars, were rebuilt into other types of equipment. N. Y. C. and C. P. R. coaches, dining, and parlor cars are very prevalent on the Line in regular service. T. H. & B. passenger equipment has used a maroon paint style similar to that of the C. P. R., this seems to be a darker shade in comparison with that of the Pennsylvania R. R.

Noticed while walking down around the yards at and around Brantford in many spots, were pieces of old rail, such as on little used tracks at the end of some siding, or some rails leading from the road into section-men's shanties; and upon looking at these rails the name of the maker and dates can still be seen quite plainly, many of them show dates of 1894 and 1895 which is the original T. H. & B. rail, while at the odd place one sees some rails of 1882, and 1872 was also noticed which will be some of the original steel put down by the B. W. & L. E., and coming

from the old Canada Southern Railway where they had been in use. Some of those names noticed were—Cammell Sheffield Toughened Steel dated 1872; Cammell Steel 1894 and 1895; Algoma Steel various dates 1907 to 1930; L. S. Co. Buffalo 1906; L. L. & S. Scranton 1892; Illinois Steel Co. South Works 1898; Barrow Steel 1882; Lackawanna 1911; H. S. I. Co. 1904; Dominion Iron & Steel Co. 1913. Also various other dates for the above, for example Illinois Steel shows from 1896 until 1911. Today the standard over the Waterford Subdivision, through Brantford to Hamilton is 85-lb. steel; however the portion of the line from Brantford to Cainsville is 100-lb. steel. The Welland Subdivision Hamilton to Welland uses 105-lb. Standard.

During 1937 passenger service on the Dunnville Branch was discontinued and a motor highway bus service substituted by private individual in connection with the T. H. & B. Company upon which railroad tickets are honored; freight service is now handled only upon this subdivision. Originally T. H. & B. passenger service was given from Welland, through Hamilton and Brantford to Waterford, until the through Toronto-Hamilton-Buffalo train service commenced, when trains then started from Hamilton running to Waterford. For a time the T. H. & B. had a through Hamilton to St. Thomas service offered with one train, having a T. H. & B. engine crew, and a M. C. R. R. train crew, the latter taken on at Waterford for the run over the M. C. rails to St. Thomas, but in more recent years only the connections with the M. C. trains have been made at Waterford. The development of the automobile and the ever increasing roads have hurt passenger service over the road but the volume of other railway business still continues at a very large figure.

From the Electrical Review published at New York in an article written some 15 or so years ago, is an interesting account of a scenic section of the Line, given so complimentary to the Road, it had this account carried in its time-tables for some years—“The traveller into Canada who is so fortunate as to be a passenger on the T. H. & B. Ry. will be rewarded by a view of a particular interesting and beautiful scene, embracing mountain, valley and lake. It is to be seen as you approach the City of Hamilton near the village of Stoney Creek, where the emerald waters of Lake Ontario suddenly burst into view from the mountain side, with fertile and cultivated valley, many miles intervening. The road rapidly descends the mountain toward Hamilton, the magnificent sweep of country constantly unfolding, and the many tints of leaf and plant blending harmoniously with the everchanging colors of the waters of the lake beyond. In this land and water picture the railway company has, almost without knowing it, perhaps, brought to the knowledge of the travelling public a mine of loveliness, impressing and attracting the eye of the layman and entrancing the vision of the artist. The scene bursts upon the traveller with electric suddenness, and, although remaining in view in constantly changing situations for a quarter of an hour as the road winds along its picturesque path down the mountain side it departs all too quickly, leaving a mental impression at once delightful and imperishable.”

The motive power of the Road has a most interesting history to relate, all of its own, and this will follow along afterward. Now having at this period of 1940, 23 locomotives and one gas-electric coach; but since the road first began to operate a total of some 59 locomotives in all have been in use; this does not include several borrowed or leased engines used at times during power shortages, nor the CPR, MCRR, and NYCR engines which have been running over the Road for years, which explains why the T. H. & B. Ry. hasn't had more engines of their own. The first Toronto, Hamilton & Buffalo labelled engines to haul passenger trains were engines #1 and #2, which had the handrails, grabirons and fittings of solid brass, while the wheels and domes were decorated with gold leaf and bright red paint.

At present the 4-6-2, 2-8-0 and 2-8-4 types are used mainly upon the Welland Subdivision, with the 4-6-2 running in through service Toronto to Hamilton and Buffalo, the 2-8-0's Hamilton to Welland and the 2-8-4 type running Hamilton to Welland and to the MCRR Montrose Yards at Niagara Falls, Ont. The 2-8-0's are used on the Dunnville Branch; while on the Waterford Subdivision through Brantford, to Waterford, the 0-6-0 type engines are used in switching and local way-freight work, with 2-8-0 on extra freights as regular time freights have not been operating over this part of the line since the depression years, and with the Gas-electric Coach doing the passenger service and taking over the runs formerly using the 4-4-0 type engines, and #10 is the spare passenger engine along with #11 the light Pacific, the #8 not having been in use for some years. The Gas-electric is also making a local return trip run Hamilton to Welland after being finished with the Waterford Subdivision runs.

It is interesting to watch the 0-6-0's operating over the line with a pilot on the front end rather than the step-boards one finds so commonly with switching type engines, of course the pilot is only necessary and put on when the engine is used out on the road and not so when in yard service when they use the step-boards. All these switchers always carry classification lamps as standard equipment for displaying signals, due to their making the long terminal transfer runs at Hamilton, such as from Aberdeen Yards over the main-line about four miles to Kinnear Jet., where they then leave the main-line for the BELT LINE, therefore necessitating their running as 'Transfer Extras' or the carrying of white signals. 2-8-0 type engines #105 and #106 are found frequently in yard service also, perhaps more particularly at Coyle, Welland, and down to Port Colborne. For some months the leading truck on #106 was removed making it an 0-8-0 type, to replace the 0-6-0's on the Brantford switch run and way-freight service on to Waterford, but due to trouble at some places on the line it was found better operating with a pilot truck which was then replaced and returning the engine to its original form as a 2-8-0 type.

The present locomotives Nos. 11-15-16-201-202 are equipped with Automatic Train Stop for operation over the Michigan Central R. R. into Buffalo, to Victoria Yard (Fort Erie, Ont.) and to Montrose Yards

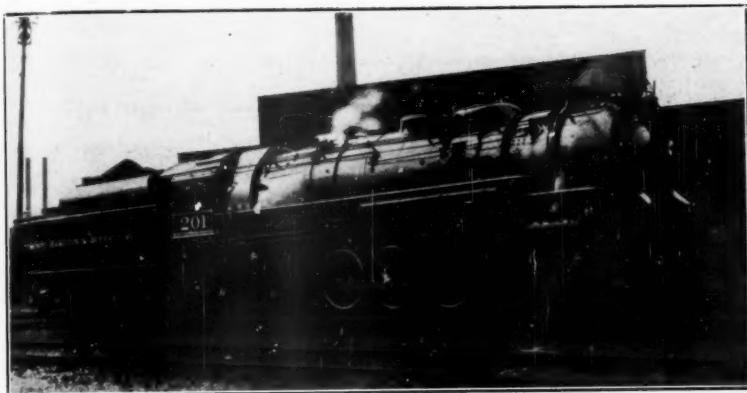
(Niagara Falls, Ont.). The Canadian Pacific engines in use over the T. H. & B. into Buffalo are also a.t.s. equipped, these being 2659, 2662 G2u class; and 2714, 2715 G4b class, all 4-6-2 types. Of recent years M. C. R. R. Nos. 8300, 8303 K-3F class, and 8309, 8400 to 8404 inclusive K-3H class, all 4-6-2 type, were in use until 1936 when the N. Y. C. #3160 K-14A and #3165 K-14E 4-6-2 engines were assigned to the M. C. and used over the T. H. & B. LINE, as these have 72" drivers and booster equipped, while the 79" drivers on the 8300-8400 series being too large for the "Big Hill" to Vinemount, and trains would lose time there having to afterward practically run the wheels off trying to make Buffalo in good time. With the event of the new N. Y. C. renumbering in 1936, the 3160 and 3165 became 4390 and 4395; lately 4392 has been added in addition. Sometimes the old M. C. K-3 class (now NYC 4640-4644) are used back again over the Line as spare or relief engine. The N. Y. C. and M. C. 4-6-4 or "Hudson" type J-1 class are in frequent runs over the Line also.

About Feb. 1938 C. P. R. #2715, and around July the 2714 followed, both being replaced respectively by C. P. R. 2337 and 2332; the 2300's having 75" to the 70" on the 2700's for driver's sizes, but there is little change in power exerted in these classes, the 2332 and 2337 are G3d class. During 1939 permission was secured from the Canadian National Railways for operation Hamilton to Toronto of heavier N. Y. C. power; those applied for are—L-1 class modernized (#2500-2684); J-3A Streamlined and not Streamlined (5400 series); and K-3Q (engines 4635-39, 4667-96, 4885-99).

Until about 1929 the M. C. 8410-8437 series K-80 classes were in use, and these always proved a most interesting engine to watch (See Bulletin #38 page 56 "High Liners"). Around 1911 M. C. 8158, a high-wheel 4-6-0 type was in use in through Buffalo-Toronto service with others of this type. And in 1913 some M. C. 7900 series of 4-4-2 type were in use on this run (See Bulletin #44 page 88 "Brief Sojourns" for note on this type) and at this time they were renumbered commencing with #8080. The C. P. R. engines started running through from Hamilton into Buffalo about 1912 or 1913 and have been mainly the 2200, 2500, 2600 series of 4-6-2 type, with an odd other class, until the M. C. and the N. Y. C. lines commenced the Automatic Train Stop when certain engines of the C. P. were then assigned and equipped with the a.t.s., as those mentioned above.

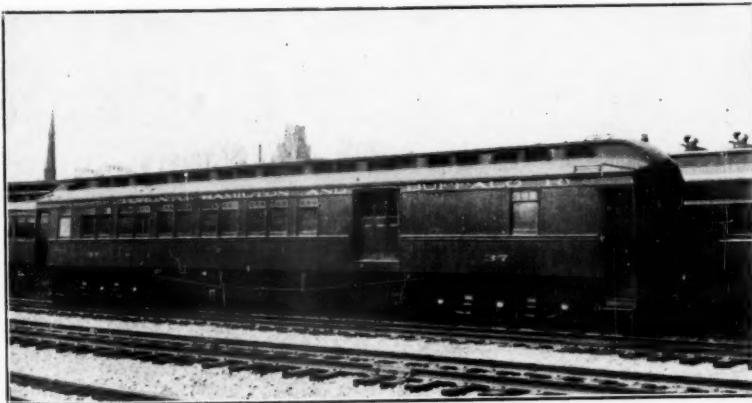
Historical information from:

Mr. H. T. Malcolmson, of the TH&B, Hamilton, Ont., with aid and thanks for permission for publication of this article.
Old By-Laws of the City of Brantford, for 1887 and 1892.
History of Brant County, by F. D. Reville, 1920.
A Statistical History of the Steam & Electric Railways in Canada, 1836-1937.

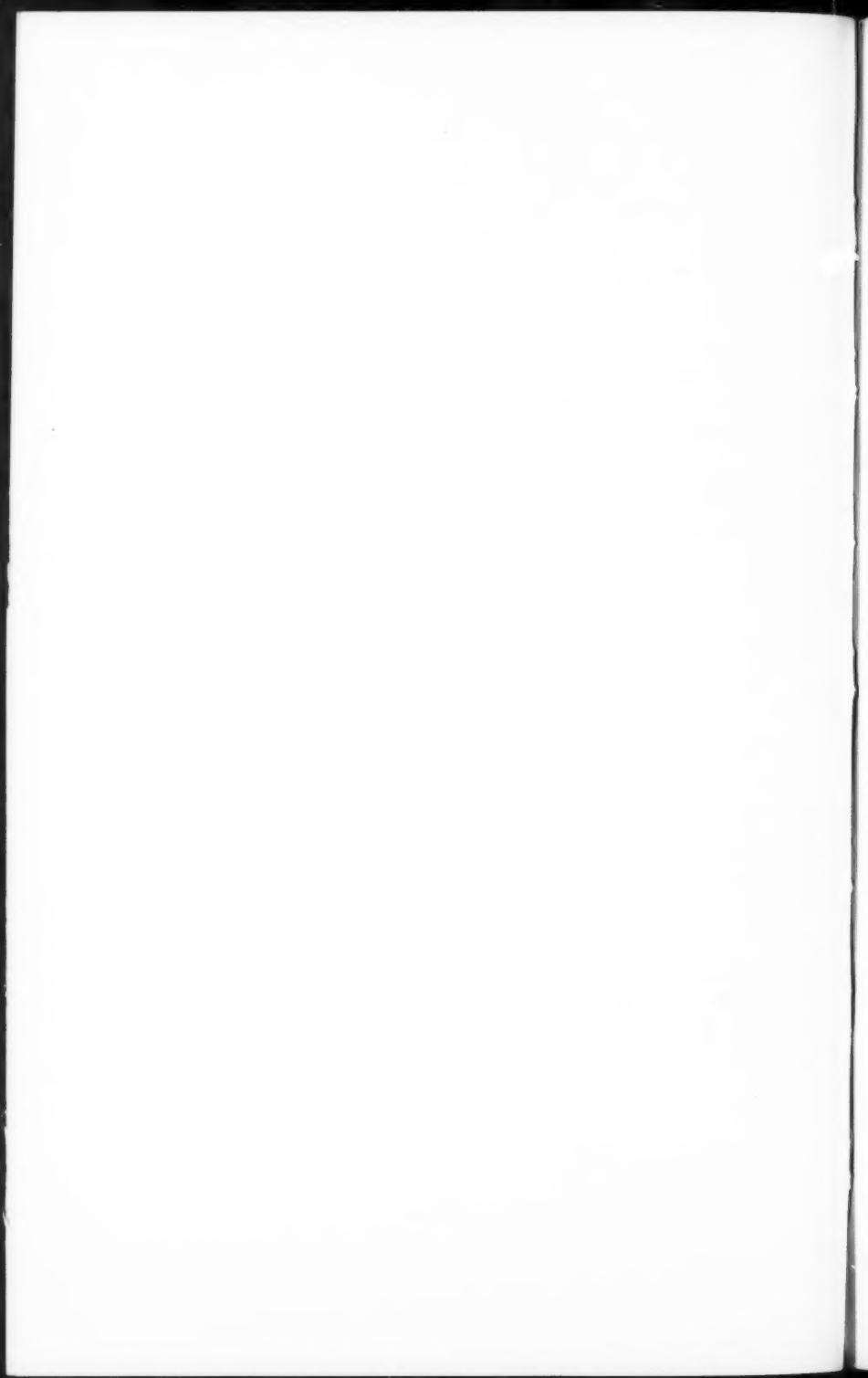


—Courtesy of Jas. E. Platt.

T. H. & B. #201, Class A, Montreal, 1928. Just out of the Shops after Classified Repairs, Hamilton Shops, 1940.



T. H. & B. Comb. #237. Originally owned by C. P. R.



The Story of Transportation in the City of Brantford, in the Brantford Expositor, Aug. 7-1937; and from other issues of paper.

A Railway History of Hamilton, by A. A. Merrilees, in the Hamilton Spectator, July 15-1936.

Considerable other information from Mr. Andrew A. Merrilees, Hamilton, Ont., from whom great and much help is appreciated, and particularly concerning history of the motive power.

TORONTO, HAMILTON & BUFFALO RY. LOCOMOTIVES 1894-1940

Class C

18x24" 66 $\frac{1}{4}$ " 170# 17490 66450 107150 4-4-0

1 Schenectady	# 4254	1894
2 Schenectady	# 4255	1894

#1 was sold about 1917 to the Maple Leaf Milling Co. as their #1. In 1927 it ran into a marsh at Lake Erie, was never pulled out and later covered with rock in making solid ground for an extension of the mill.

#2 was scrapped in 1912, the boiler sold to David Dick of Mount Pleasant and used for loading gravel at Dick's Pit, 2 miles south of Mt. Pleasant.

(The dimensions that accompany each class are cylinders, diameter of drivers, steam pressure, tractive effort, weight on drivers, weight of engine and wheel arrangement.)

Class C-1

18x24" 67" 170# 17200 80000 120000 4-4-0

3 Baldwin	#14515	1895
1st 4 Baldwin	#14516	1895
1st 5 Baldwin	#14517	1895

These three engines were sold in 1917 to the Evansville, Indianapolis & Terre Haute R. R., where they retained the same numbers and were rebuilt. They were scrapped when the "Big Four" took control of the E. I. & T. H.

Class C

18 $\frac{1}{4}$ x26" 69" 180# 19730 95980 143200 4-4-0

2nd 4 Baldwin	#25666	1905
2nd 5 Baldwin	#25685	1905
6 Baldwin	#25789	1905

In 1923 were renumbered from 14, 15 and 16 when new 15 and 16 (4-6-2) were delivered. All were sold in 1934 to the Hamilton Millstocks & Metal Co. for scrap. #7 always vacant.

Class F

22x26" 69" 180# 27900 139500 184797 4-6-0

8 Montreal	#49650	1911
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Sold Dec. 1939 to Steel Co. of Canada, Ltd., Hamilton, for scrap.

Class F-1

22x26"	73"	180#	26370	139500	184797	4-6-0
9	Montreal		#44269	1908		
10	Montreal		#40863	1907		

#9 sold, Dec. 1928 to Hamilton Millstocks & Metal Co. for scrap.

Class K

23x28"	69"	200#	36500	138000	220900	4-6-2
11	Montreal		#53287	1913		
In 1936 rebuilt—22½x28" 69" 180# 31430.						

Not Classified

16x24"	56"	4-4-0	.....	.....	.....	.....
12	Grant		.....	.....	.....	.....

Originally Canada Southern #115, renumbered 318, May 25, 1883. Sold to the Bradford, Waterloo & Lake Erie Ry. in January, 1891.

13 Always vacant

Class C

14	Baldwin		#25666	1905	Renumbered
1st	15	Baldwin	#25685	1905	4, 5 & 6
1st	16	Baldwin	#25789	1905	

Nos. 14 and 15 were purchased in 1917 from the Buffalo & Susquehanna R. R. under Nos. 276-277, formerly 176-177.

No. 16 was purchased in 1917 from the Buffalo & Susquehanna R. R. #278, originally East Louisiana R. R. #102.

Class K-1

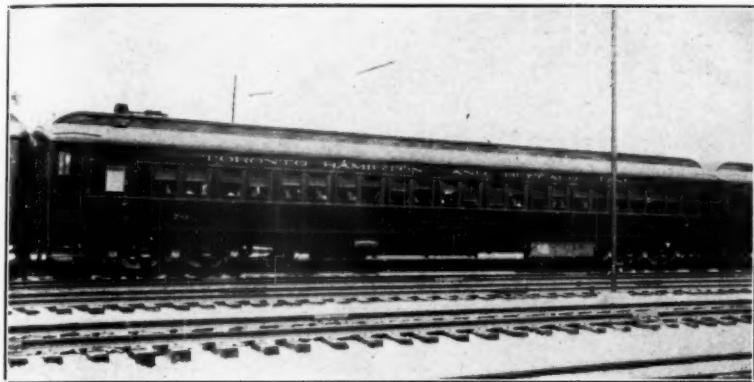
24x28"	69"	200#	39700	172600	263500	4-6-2
2nd	15	Montreal		#65359	1923	
2nd	16	Montreal		#65360	1923	

Not Classified

17x24" 60" 4-4-0

17	Rhode Island		.....	1874	
18	Baldwin		.....	1887	
19	Baldwin		.....	1887	

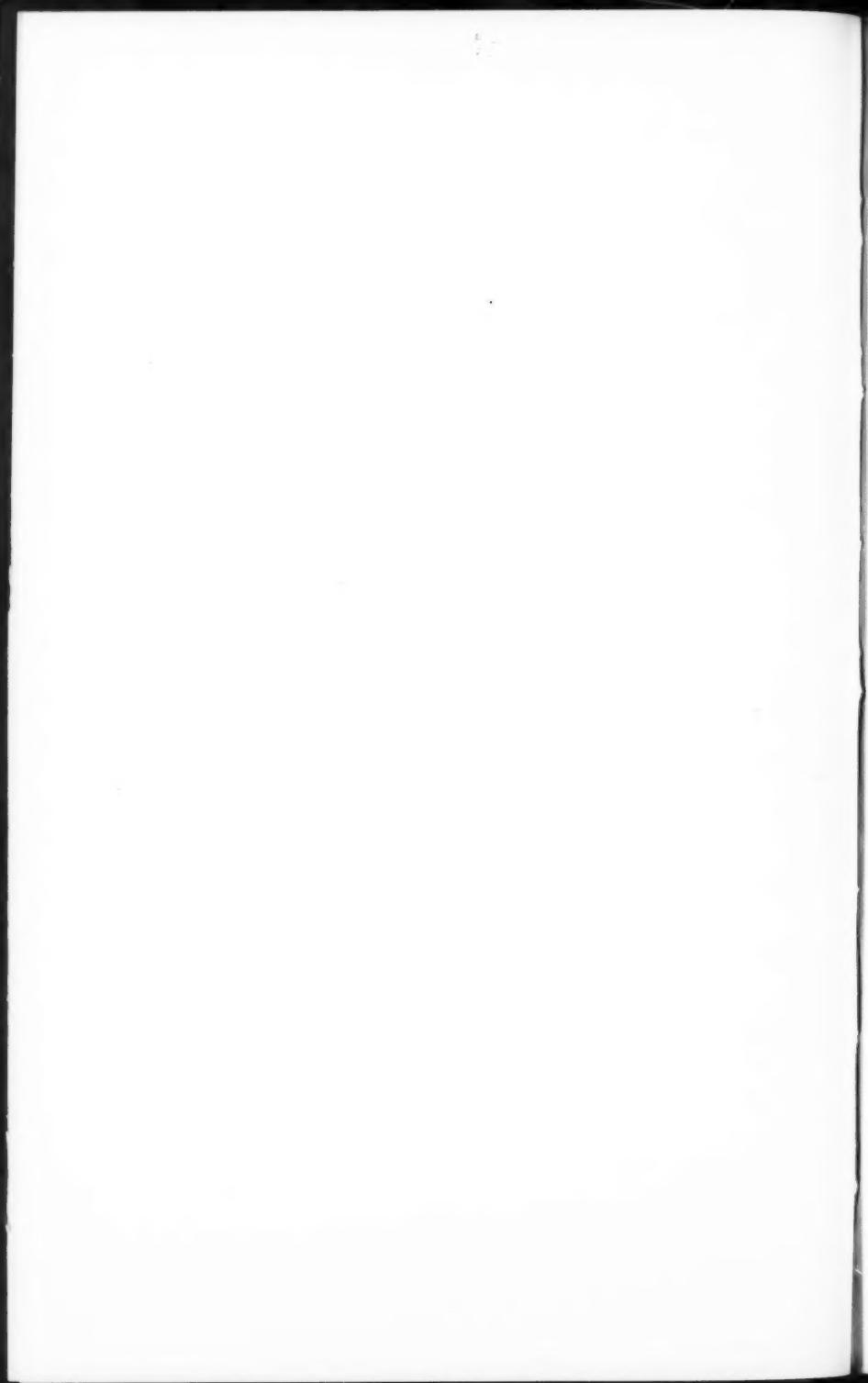
No. 17 was purchased in 1899 from the Chicago & Eastern Transit Co. As late as 1934 the boiler was used as an air tank at the Aberdeen Car Shops. Nos. 18 and 19 were purchased in 1899 from the Chicago Belt Ry. No. 18 was sold in 1909 to a cement company in Quebec and No. 19 was sold the same year to a lumber company in New Brunswick.



T. H. & B. Line Steel Coach #70. Air conditioned, individual seats. Note names of three roads on car body.



T. H. & B. Station at Hamilton. Built 1932-1933.



Class F-3

18x24" 54" 160# 20300 86000 116500 4-6-0

20 Schenectady	# 4252	1894
21 Schenectady	# 4253	1894

No. 20 was sold in 1919 to the San Juan Sugar Co., Cuba and No. 21 was sold the same year to a concern in Nova Scotia.

Class E

19x24" 56½" 160# 21500 81000 100000 2-6-0

22 Baldwin	#14057	1894
23 Baldwin	#14058	1894
24 Baldwin	#14059	1894

No. 22 was sold in 1917 by the General Equipment Co. to the St. Lawrence R. R., supposedly a subsidiary of the De Grasse Paper Co., Pyrites, N. Y. No. 23 was sold in 1917 to the Arcade & Attica R. R. as their #1 and No. 24 was sold the same year to the Continental Mexican Rubber Co., of New York as their #1 for use on the National Rys. of Mexico around Cedral and Estacion Catorce, Mexico. In 1921 was sold to General Francisco Pancho Villa.

Class F-2

19x26" 60" 195# 26820 107000 141000 4-6-0

25 Montreal	#29876	1904
26 Montreal	#29877	1904
27 Montreal	#29878	1904

No. 25 was sold in 1926 to Morrow & Beatty, Ltd. #2, who were constructing the mill of the Spruce Falls Power & Paper Co., at Kapuskasing, Ont. Upon the completion of the mill, that company purchased the engine, numbering it 103. No. 26 was sold in 1922, through the Canadian Equipment Co. to Grant, Smith & McDonnell Co., who were building the Temiskaming & Northern Ontario Ry. After building seven miles out of Cochrane, the contract lapsed and the engine was shipped away. No. 27, same as No. 25. Became M. & B. Ltd. #3, S. F. P. & P. Co. #104 destroyed by fire in 1934.

Class F-2A

18x26" 57" 195# 25400 105000 143000 4-6-0

28 Schenectady	#29531	1904
29 Schenectady	#44395	1907

No. 28—same as No. 26. No. 29, sold in 1925 to the Atlantic, Quebec & Western Ry., as #29, becoming Canadian National Rys. #1178 in 1929, Class G-21-A, scrapped at Moncton, N. B., May, 1937.

Class F-2B

18½x26" 60" 195# 24570 112700 152000 4-6-0

30 Montreal	#44268	1908
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Sold in 1934 to Hamilton Millstocks & Metal Co. for scrap.

Nos. 31-35 always vacant

Class B-3

20x26"	51"	180#	31200	145000	0-6-0
36	Montreal		#53289	1913	
37	Montreal		#53290	1913	

No. 36 sold in 1935 to Hamilton By-Products Coke Ovens Ltd. #3.
No. 37 sold in 1935 to Steel Co. of Canada, Ltd. (Hamilton) #2.

Class A

17x24"	51"	145#	17400	79600	0-4-0
38	Schenectady		# 4092	1893	
39	Schenectady		.....	1893	

Both engines purchased in 1899 from the Union Stock Yards & Transit Co., Chicago, the former being #28 on that road. No. 38 was sold in 1918 to the Dominion Foundries & Steel Co., their #2 and scrapped in 1938. No. 39 was sold in 1918 to the Minto Coal Co., Minto, N. B. as #1 and scrapped in 1935.

Class B

18x24"	51"	180#	23300	100000	0-6-0
40	Montreal		#29879	1904	

Sold in 1936 to Dominion Foundries & Steel Co. #3.

Class B-1

19x26"	51"	190#	30940	125000	0-6-0
41	Montreal		#44267	1908	

Sold in 1926 to Fraser Companies Ltd., Edmundston, N. B. #4

Class B-2

21x28"	51"	180#	37040	166000	0-6-0
42	Montreal		#51510	1912	
43	Montreal		#51511	1912	
44	Montreal		#53288	1913	
45	Canadian		# 1445	1917	
46	Canadian		# 1446	1917	
47	Canadian		# 1447	1917	
48	Canadian		# 1448	1917	
49	Canadian		# 1509	1918	
2nd	50	Canadian	# 1510	1918	
2nd	51	Canadian	# 1511	1918	
2nd	52	Canadian	# 1512	1918	
2nd	53	Canadian	# 1513	1918	
2nd	54	Canadian	# 1514	1918	

2nd 52-54 were sold in 1919 to the Canadian Northern Ry. Nos. 500-502, becoming Canadian National Rys. Nos. 7302-7304, Class O-13a. No. 52 was the only one that saw service on the T. H. & B.

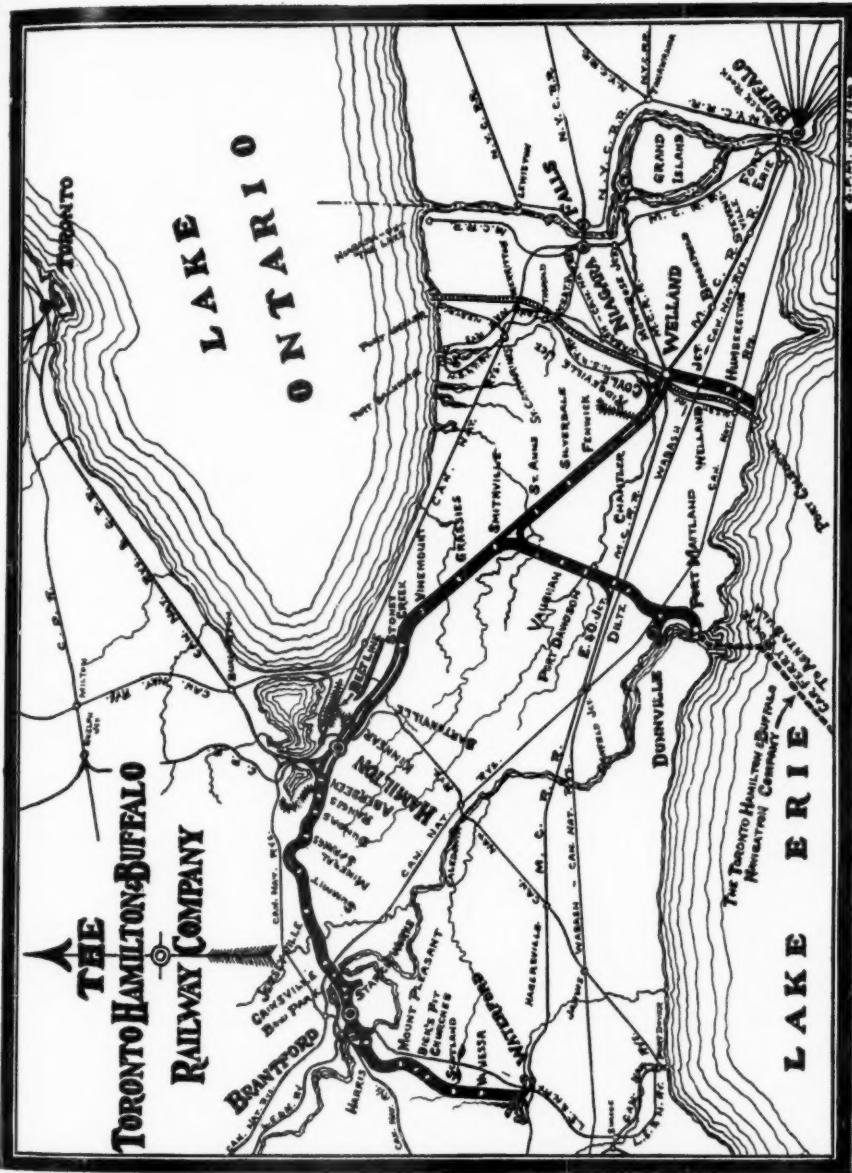
**THE
TORONTO HAMILTON & BUFFALO
RAILWAY COMPANY**

100

L A K E O N T A R I O

L A K E E R I E

The Toronto Hamilton Montreal Quebec



Class G

21½x28" 55" 200# 41500 171000 196000 2-8-0

1st 50 Montreal #47665 1910

Renumbered 101 in 1919

Class G-1

21½x28" 55" 200# 41500 171000 196000 2-8-0

1st 51 Montreal #48836 1910

1st 52 Montreal #48837 1910

Renumbered 102 and 103 in 1919

Class G-2

23x28" 55" 180# 41200 178800 204500 2-8-0

1st 53 Montreal #50741 1912

1st 54 Montreal #50742 1912

55 Montreal #51512 1912

56 Montreal #51513 1912

Renumbered 104-107 in 1919

Nos. 57-59 always vacant

Not Classified

23x32" 63" 200# 45680 198000 221500 2-8-0

60 Schenectady #37777 1905

Purchased from the Pennsylvania R. R. 1917-18, their #2762, Class H-28. Sold in 1920 to W. M. Ritter Co., lettered Raleigh Lumber Co. #60 and shipped to Lillybrook, W. Va. Used on the Virginian Ry. and branches around Mullen, W. Va. In 1925 was sold to the Cincinnati, Indianapolis & Western R. R. #331, Class E-45, later B & O #439, Class E-45, scrapped at Indianapolis, July, 1933.

Nos. 61-69 always vacant.

Nos. 70-72 were formerly 1st Nos. 50-52 and carried Nos. 70-72 for one year and ten months, 1917-1918 as these three engines used saturated steam, the others of the class using superheated steam. When they were rebuilt to superheated steam, they again became Nos. 50-52, Class G.

Class G

23x28" 55" 200# 45780 178800 204500 2-8-0

101 Montreal #47665 1910

102 Montreal #48836 1910

103 Montreal #48837 1910

formerly

104 Montreal #50741 1912

Nos. 50-56

105 Montreal #50742 1912

106 Montreal #51512 1912

107 Montreal #51513 1912

In May, 1937, #106 was rebuilt to an 0-8-0 type and in March, 1938, the front truck was replaced and the engine again became a "consol."

Class A

28x30" 63" 240# 69000 249500 393000 2-8-4

201	Montreal	#67573	1928
202	Montreal	#67574	1928

Not Classified

16x24" 57" 4-4-0

314 Hinkley 1874

Originally Canada Southern #111, renumbered 314 on May 22, 1883. Sold to the Brantford, Waterloo & Lake Erie Ry. in Nov. 1889. Scrapped by the T. H. & B. at Brantford in 1893 and very likely never carried a T. H. & B. number.

At various times the T. H. & B. has rented locomotives from other roads. During the construction of the Hamilton Tunnel, 1895-1896, it is reported that C. P. R. Nos. 181 and 183 (diamond stacks) and Nos. 191 and 193 (straight stacks), all 4-4-0 type, were used in excavating the tunnel. Also #244, 4-4-0 type was used in passenger service.

Michigan Central #408, 4-4-0 type was used in 1903-1904 on the Belt Line as a switcher.

Buffalo & Susquehanna #118, 2-8-0 type and Michigan Central #355, 4-6-0 type were both in service on the T. H. & B. for a short time.

In 1917, during the shortage of power, New York Central Nos. 1721 and 1768, both 2-6-0 type and Pennsylvania R. R. Nos. 2630, 2632, 2652, and 7611, all 2-8-0 type were in service.

In 1927, N. Y. C. #355, Class H-10B and Boston & Albany #1433, Class A-1B, were rented for test purposes, the 2-8-4 type taking their liking, the road ordered two for their own service.

Locomotives of The Maine Central R. R.

By CHAS. E. FISHER

Before continuing with the renumbering of the Maine Central locomotives, it might be best to mention the four roads acquired by the Maine Central subsequent to 1900.

The first of these was the

PORTLAND & RUMFORD FALLS R. R.

The Buckfield Branch was chartered July 22, 1847 to build a railroad from Mechanic Falls, on the Grand Trunk Ry., to East Sumner, Maine. The road was opened in June, 1854 and the gauge was the same as that of the Grand Trunk Ry., 5'6". On May 1, 1863, the Portland & Oxford Central R. R. acquired this property and the road was extended to Canton, a distance of 27½ miles, in 1870. We know that the Portland & Oxford Central had two locomotives, what they were and whether they had any more, we do not know.

The Rumford Falls & Buckfield R. R. was chartered March 3, 1874 to build a railroad from Mechanic Falls to Gilbertville. The road was completed in 1879 and from 1878-1890 it operated the Portland & Oxford Central as Receiver. It was probably under this receivership that the P. & O. C. was changed to standard gauge.

The Portland & Rumford Falls R. R. was chartered Oct. 8, 1890 to build a railroad from Rumford Jet. (Auburn) to Rumford. The road was completed Aug. 23, 1897. At the outset, the road acquired the Portland & Rumford Falls R. R. on Nov. 1, 1890 and on Nov. 23, 1896 they acquired the Portland & Oxford Central R. R. On April 26, 1907, the Maine Central acquired the Portland & Rumford Falls R. R.

The Rumford Falls & Rangeley Lakes R. R. was chartered Aug. 20, 1894 to build a railroad from Rumford to Oquossoc. The road was not completed until Aug. 28, 1902 and was leased to the Portland & Rumford Falls R. R. on April 4, 1907 and came into the Maine Central with the lease of that road.

So far as we can learn the Rumford Falls & Buckfield R. R. had eight locomotives which were as follows:

...	Portland	356	1878	4-4-0	14x22"	60"	Ex P&RF #1 used during construction of the road and then scrapped
1	Baldwin	14494	1895	2-6-2	16x24"	38"	P&RF #51
2	Baldwin	14488	1895	2-6-2	16x24"	38"	P&RF #53
3	Baldwin	15480	1897	2-6-0	14&24x24"	57"	P&RF #54
4	Baldwin	14955	1896	2-6-2	16x24"	38"	P&RF #52
5	Schenectady	.....	.....	4-4-0	Nos. 5 & 6 were purchased in 1896 from the Lake Erie & Western R. R. and were scrapped in 1898		
6	Schenectady	.....	.....	4-4-0	18x24" Purchased from Fitchburg R. R. as #75 and scrapped after little service		
75	Hinkley	.....	.....	2-6-0			

The 2-6-2 were side tank engines.

The locomotives of the Portland & Rumford Falls R. R. were as follows:

1	"I. Washburn Jr."	Portland	# 356	4-4-0	14x22"	60"	Sold in 1895 to RF&RL
2	"S. C. Andrews"	Portland	357	4-4-0	14x22"	60"	Sc-1907
3	"Buckfield"	Rhode Island	1403	4-4-0	14x20"	54"	Re M. C. 2
The above three engines came from the Rumford Falls & Buckfield R. R. Nos. 1 & 2 were built in 1878 and #3 was built in 1883.							
4	Manchester	# 1568	1892	4-4-0	17x24"	62"	Re M. C. 94
5	Portland	610	1893	4-4-0	18x24"	62"	137
6	Manchester	1590	1893	0-4-0	16x24"	50"	12
7	Schenectady	4256	1894	4-4-0	17x24"	60"	95
8	Schenectady	4270	1894	4-4-0	17x24"	60"	96
9	Baldwin	14489	1895	4-4-0	18x24"	62"	138
10	Schenectady	4520	1897	2-6-0	19x26"	57"	246
11	Schenectady	4521	1897	2-6-0	19x26"	57"	247
12	Schenectady	4623	1897	2-6-0	19x26"	57"	248
13	Manchester	26307	1902	2-6-0	20x28"	58"	320
14	Manchester	26308	1902	2-6-0	20x28"	58"	321
31	Manchester	37710	1905	0-6-0	19x26"	51"	188
51	Baldwin	14494	1895	2-6-2	16x24"	38"	Sold by M. C.—RF&RL #1
52	Baldwin	14955	1896	2-6-2	16x24"	38"	Re M. C. 113—RF&RL #4
53	Baldwin	14488	1895	2-6-2	16x24"	38"	162—RF&RL #2
54	Baldwin	15480	1897	2-6-0	14&24x24"	57"	249—RF&RL #3

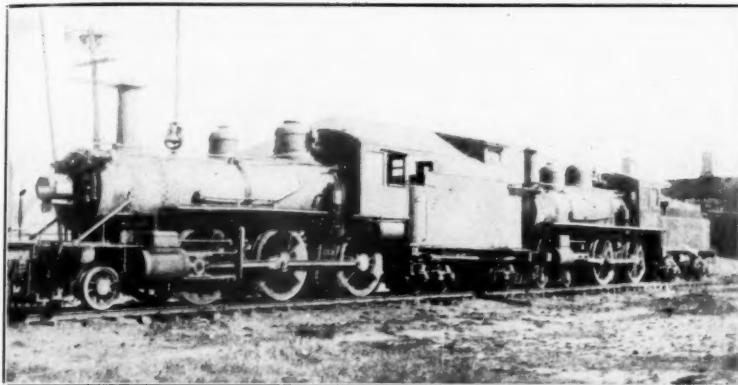
The #5 was originally the Complete Combustion Co. #1 locomotive and the #54 was subsequently altered to a simple engine by the Maine Central.

WASHINGTON COUNTY R. R.

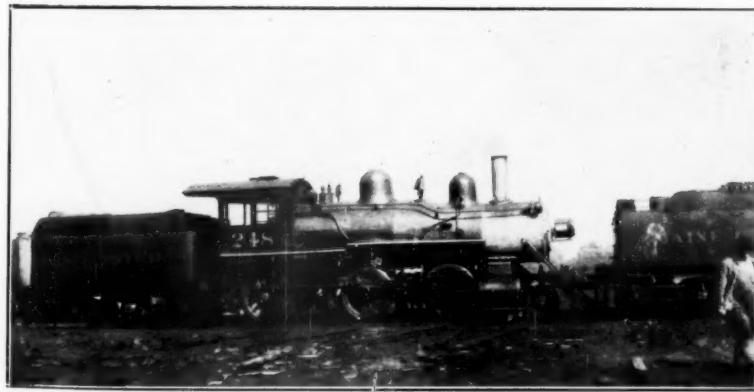
On July 26, 1847 the Calais & Baring R. R. was chartered to build between those two named towns and the road was opened in 1852. On March 16, 1854 the Lewy's Island R. R. was chartered to build between Baring and Princeton and the road was opened in 1856. On Feb. 26, 1870 the St. Croix & Penobscot was chartered to acquire both of these roads. On March 7, 1893 the Washington County R. R. was chartered to build between Washington Jet. and St. Croix Jet. On Jan. 1, 1899 the Washington Co. R. R. acquired the St. C. & P. and on July 1, 1911 control of the Washington County R. R. was acquired by the Maine Central.

While there must have been other locomotives on these early roads, the Hinkley records record only their #595, the "Princeton," built June 28, 1856 for the Lewy's Island R. R. with 14x20" cyl. 48" drivers. The Portland Co. built their #108, the "St. Croix" in 1860 for the Calais & Baring, 12x20" 60". There were doubtless others. The Washington County engines were as follows:

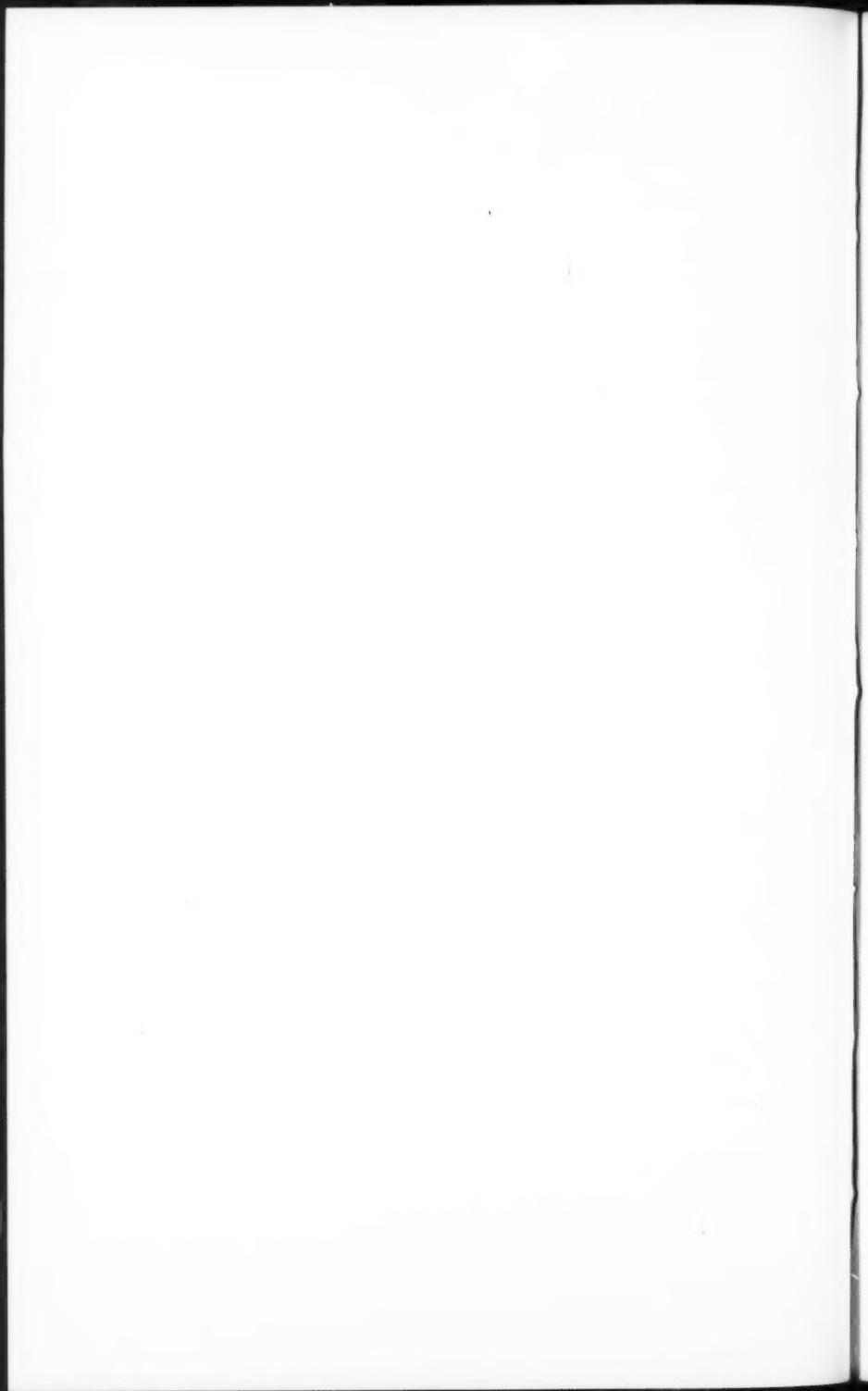
1	Brooks	2948	1898	4-4-0	18x24"	62"	Re 21	M. C. 117
2	Brooks	2949	1898	4-4-0	18x24"	62"	22	118
3	Brooks	2950	1898	4-4-0	18x24"	62"	23	119
4	Brooks	2943	1898	4-6-0	18x24"	56"	31	110
5	Brooks	2944	1898	4-6-0	18x24"	56"	32	112
6	Brooks	2945	1898	4-6-0	18x24"	56"	33	113
7	Brooks	2946	1898	4-6-0	18x24"	56"	34	114
8	Brooks	2947	1898	4-6-0	18x24"	56"	35	115
10	Brooks	3275	1899	4-4-0	18x24"	62"	24	120
11	Brooks	3234	1899	0-6-0	17x24"	50"		189
9	Portland	401	1881	4-4-0	17x24"	59"	68	This engine was probably built for the St. Croix & Penobscot R. R.



Me. C. #237, Class M, Portland, 1890 at Waterville, Me. The Last Portland!



Me. C. #248. Class M. Schenectady, 1897 at Bangor, Me.



SOMERSET RAILWAY

The Somerset R. R. was chartered Mar. 19, 1860 to build a railroad from Oakland to North Anson. It was opened in 1875. Reorganized in 1883 as the Somerset Ry. it was opened to Bingham in 1890 and to Kineo Station in 1907. The road served a rich timber country and was leased by the Maine Central July 1, 1911.

Of the early locomotives on this road, we don't know a great deal. The late Freeman Smith listed them as the "Caratunk," "Old Point," "Norridgewock," "Carabassett," "Bombazine" and "Moxie," numbered 1-6 respectively. In Bulletin #28, mention is made of two Portland, Saco & Portsmouth engines being sold to the Somerset Ry., by the Eastern R. R. Both were Hinkley built in 1867 and 1868 and took numbers 2 and 1 respectively. The Maine Central sold three of the Knox & Lincoln engines and also their 2nd 43 in the old series. This accounts for five, what the other one was is unknown. Subsequent to the renumbering in 1900 the Maine Central sold several others to the Somerset Ry. and some were scrapped about 1910. The following locomotives were received from the Somerset Ry. by the Maine Central:

2	Manchester	#1760	1904	4-4-0	17x24"	56"	Re M. C.	84
7	Manchester	1743	1904	4-4-0	17x24"	60"		85
10	Manchester	41438	1907	4-4-0	17x24"	56"		86
12	Manchester	41439	1907	4-4-0	17x24"	56"		87
20	Baldwin	26269	1905	4-6-0	18x24"	48"		106
21	Baldwin	26270	1905	4-6-0	18x24"	55"		107
22	Manchester	41436	1905	4-6-0	18x24"	55"		108
23	Manchester	41437	1905	4-6-0	18x24"	55"		109

SEBASTICOOK & MOOSEHEAD LAKE R. R.

This little road was chartered July 15, 1886 to build from Pittsfield to Hartland. It was completed in 1886 and in 1910 was extended to Mainstream. The road was sold to the Maine Central on Sept. 13, 1910.

Of the locomotives on this road, only the following are known:

8	Rhode Island	2131	1889	4-4-0	17x24"	56"	Re M. C.	83
2	Rhode Island	2807	1892	0-4-4	15x20"	44"		105-3

The last engine was given in exchange for the P & O "Fryeburg," 1st 105.

One other road deserves mention, the Belfast & Moosehead Lake R. R. Chartered on Mar. 6, 1868 to build from Burnham Jet. to Belfast, the road was opened in 1870. It was leased to the Maine Central Apr. 27, 1871 and the lease was cancelled on Jan. 2, 1926 and the road has been operated independently since. If the original company had any equipment, no record is known to this day. In all probability it was operated by the Maine Central prior to its lease.

In 1900, the Maine Central renumbered all of their locomotives, grouping as far as possible those of the same dimensions and assigning a letter for each class. Numerically, they ran as follows:

Class A

Engines with small cylinders used as switchers

1	Portland	#	167	1872	0-4-0	12x18"	38"	Ex 54
2	Portland		524	1884	0-4-0	15x20"	44"	93—Sc 1908
2	Rhode Island		1403	1883	4-4-0	14x20"	54"	P&RF 3
3	Rhode Island		2807	1892	0-4-4	15x20"	44"	105—S&ML #2

All Class A locomotives have long since been scrapped.

Class B—0-4-0 Type

4	M. C. R. R.			1888	16x24"	44"	Ex 4
5	M. C. R. R.			1890	16x24"	44"	120
6	M. C. R. R.			1889	16x24"	44"	100
7	Portland		570	1887	16x24"	44"	7
8	M. C. R. R.			1887	16x24"	44"	2
9	Portland		571	1887	16x24"	44"	9
10	Portland		572	1887	16x24"	44"	12
11	M. C. R. R.			1889	16x24"	44"	73
12	Manchester		1590	1893	16x24"	56"	P&RF #6—Sold to Poland Springs Ry.

13-14 Vacant

All of the above engines have since been scrapped.

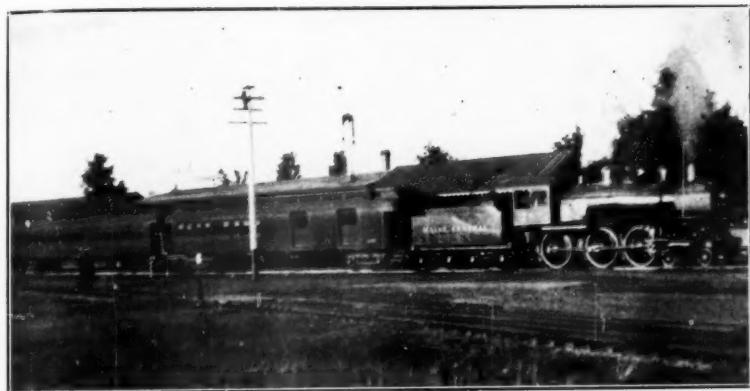
Class I—Small 2-6-0 Type

15	Portland		329	1875	17x26"	54"	Ex 108
16	Portland		330	1876	17x26"	54"	109
17-20	Vacant						

All Class I engines have been scrapped.

Class D—4-4-0—16x24"

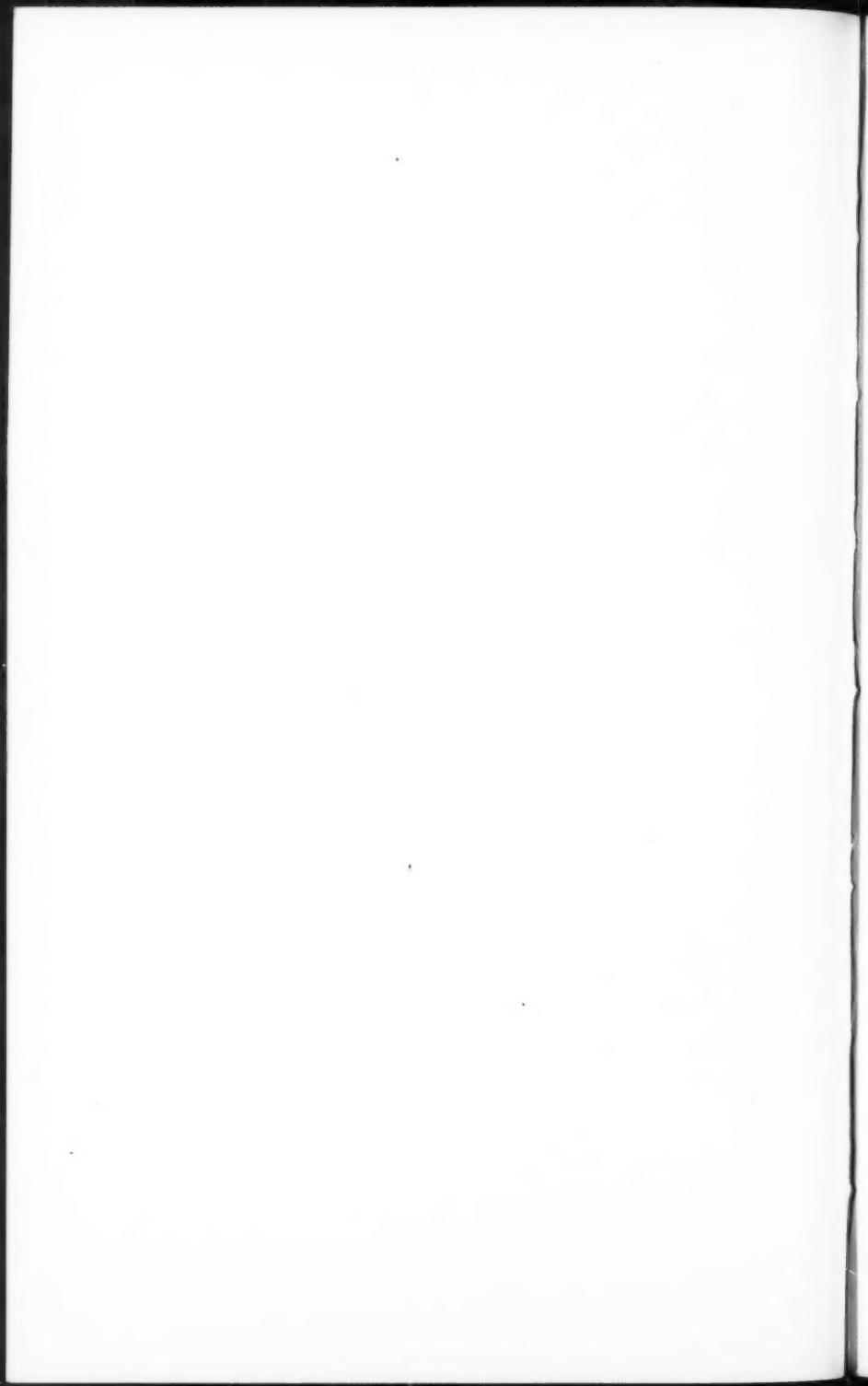
21	Manchester		1482	1890	16x24"	60"	Ex 147	Sold—Somerset Ry.
22	Manchester		1171	1883	16x24"	60"	146	
23	Rhode Island		.....	1872	16x24"	60"	125	
24	Portland		246	1873	16x24"	60"	106	Sold—Georges Valley R. R.
25	Hinkley		.....	1882	16x24"	60"	87	
26	Hinkley		.....	1882	16x24"	60"	86	
27	Portland		370	1880	16x24"	60"	83	
28	Portland		362	1880	16x24"	60"	82	
29	Portland		192	1871	16x24"	60"	79	Sold—Portland Terminal Co. 1st 850
30	Portland		191	1871	16x24"	60"	78	
31	Portland		353	1879	16x24"	60"	66	
32	Portland		323	1877	16x24"	60"	63	
33	Portland		302	1877	16x24"	60"	62	
34	Baldwin		.....	1873	16x24"	60"	61	
35	Baldwin		.....	1873	16x24"	60"	60	
36	Taunton		635	1872	16x24"	60"	59	



—Courtesy of C. F. H. Allen.
Me. C. #282 on 7.00 A. M. North Conway—Beecher Falls Train—Oct. 1914. Schenectady, 1903.



Me. C. #403, Class O, Schenectady, 1918 at Bangor, Me.



37	Taunton	634	1872	16x24"	60"	58
38	Baldwin	2287	1870	16x24"	60"	38
39	Taunton	518	1871	16x24"	60"	39
40	Taunton	525	1871	16x24"	60"	40
41	Taunton	527	1871	16x24"	60"	41
42	Taunton	537	1872	16x24"	60"	52
43	Portland	257	1873	16x24"	60"	55
44-50	Vacant					

All Class D engines have since been scrapped.

Class E—4-4-0—17x24"

51	Portland	540	1886	17x24"	62"	Ex 8
52	Portland	541	1886	17x24"	62"	13
53	Portland	542	1886	17x24"	62"	14
54	Rhode Island	1547	1885	17x24"	62"	18
55	Rhode Island	1546	1885	17x24"	62"	21 Sold—Portland Term. Co. as 2nd 850
56	Rhode Island	1548	1885	17x24"	62"	22
57	Portland	576	1887	17x24"	62"	57
58	Portland	617	1892	17x24"	62"	23
59	Rhode Island	1549	1885	17x24"	62"	24 Sold—Knox R. R.
60	Rhode Island	1550	1885	17x24"	62"	25
61	Portland	543	1886	17x24"	62"	26
62	Portland	544	1886	17x24"	62"	27
63	Portland	574	1887	17x24"	62"	28
64	Portland	545	1887	17x24"	62"	29
65	Portland	546	1887	17x24"	62"	30
66	Portland	547	1887	17x24"	62"	33
67	Portland	394	1881	17x24"	62"	67
68	Portland	395	1881	17x24"	62"	68
69	Portland	401	1881	17x24"	59"	Ex W C #9
70	Portland	450	1882	17x24"	62"	Ex 69
70	Portland	451	1882	17x24"	62"	70
71	Portland	548	1887	17x24"	62"	34
72	Portland	549	1887	17x24"	62"	35
73	Portland	550	1887	17x24"	62"	42
74	Portland	614	1892	17x24"	62"	74
75	Portland	551	1887	17x24"	62"	43 Sold—Somerset Ry.
76	Portland	552	1887	17x24"	62"	44 Sold—Somerset Ry.
77	Portland	553	1887	17x24"	62"	45
78	Portland	555	1887	17x24"	62"	46
79	Portland	575	1887	17x24"	62"	47
80	Portland	618	1891	17x24"	62"	141
81	Portland	611	1891	17x24"	62"	131
82	Portland	609	1890	17x24"	62"	130
83	Rhode Island	.....	1889	17x24"	62"	129
83	Rhode Island	2131	1889	17x24"	62"	S&ML #8
84	Rhode Island	.....	1889	17x24"	62"	128
84	Manchester	1760	1904	17x24"	62"	SRy #2
85	Rhode Island	1853	1887	17x24"	62"	126
85	Manchester	1743	1904	17x24"	62"	SRy #7
86	Portland	530	1885	17x24"	62"	116
86	Manchester	41438	1907	17x24"	62"	SRy #10
87	Portland	529	1885	17x24"	62"	115
87	Manchester	41439	1907	17x24"	62"	SRy #12
88	Portland	454	1883	17x24"	62"	Ex 88
89	Portland	455	1883	17x24"	62"	89
90	Portland	519	1884	17x24"	62"	90

91	Portland	520	1884	17x24"	62"	91	Sold—White River R. R.
92	Portland	521	1884	17x24"	62"	92	
93	Hinkley	.....	1885	17x24"	62"	112	
94	Portland	525	1884	17x24"	62"	94	Sold—Somerset Ry.
94	Manchester	1568	1892	17x24"	62"	P&RF #4	
95	Portland	526	1884	17x24"	62"	95	Sold—Somerset Ry.
95	Schenectady	4256	1894	17x24"	62"	P&RF #7	
96	Portland	527	1884	17x24"	62"	96	Sold—Somerset Ry.
96	Schenectady	4270	1894	17x24"	62"	P&RF #8	
97	Portland	528	1884	17x24"	62"	97	Sold—Somerset Ry.
98	Portland	452	1882	17x24"	62"	111	
99-102	Vacant						

Doubtless there was some variation in the diameter of the drivers. The figures reported under the original numbers are doubtless nearer correct.

Class I—Small 2-6-2 Tank Engine

103	Baldwin	14488	1895	16x24"	38"	Ex 162—P&RF #53
104-105	Vacant					

Class G—4-6-0—18x24"

106	Baldwin	26269	1905	18x24"	48"	Ex SRy #20
107	Baldwin	26270	1905	18x24"	55"	SRy #21
108	Manchester	41436	1905	18x24"	55"	SRy #22
109	Manchester	41437	1905	18x24"	55"	SRy #23
110	Brooks	2943	1898	18x24"	56"	WC #31
112	Brooks	2944	1898	18x24"	56"	WC #32
113	Brooks	2945	1898	18x24"	56"	WC #33
114	Brooks	2946	1898	18x24"	56"	WC #34
115	Brooks	2947	1898	18x24"	56"	WC #35
116	Rhode Island	2088	1888	17x24"	54"	127

111	Portland	221	1874	2-6-0	Class I	17x24" 54"	Ex 107
113	Baldwin	14955	1896	2-6-2		16x24" 38"	Re 4

The #111 was scrapped and the 113 renumbered at the time these Washington County and Somerset engines were acquired. Only the 110 and 114 are still in service (1939)

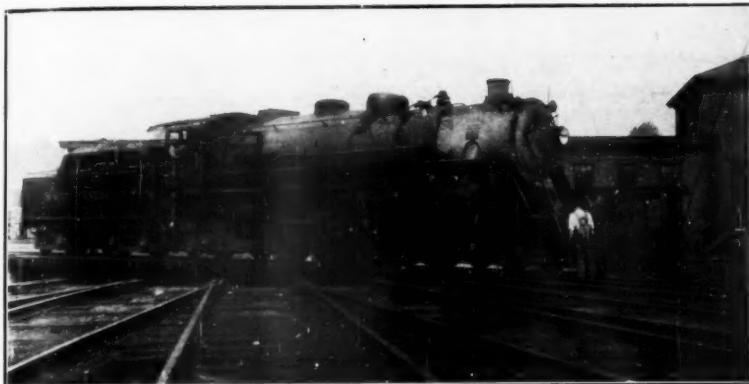
Class H—4-4-0—18x24"

117	Brooks	2948	1898	18x24"	62"	Ex WC #21
118	Brooks	2949	1898	18x24"	62"	WC #22
119	Brooks	2950	1898	18x24"	62"	WC #23
120	Brooks	3275	1899	18x24"	62"	WC #24
121	Rhode Island	1543	1885	18x24"	56"	Ex 3
122	Rhode Island	1544	1885	18x24"	56"	11
123	Rhode Island	1545	1885	18x24"	56"	15
124	Portland	583	1888	18x24"	62"	98
125	Portland	584	1888	18x24"	62"	99
126	Portland	587	1889	18x24"	60"	101
127	Portland	588	1889	18x24"	60"	104
128	Portland	600	1889	18x24"	60"	117
129	Portland	601	1889	18x24"	60"	118
130	Portland	586	1889	18x24"	60"	119
131	Portland	620	1892	18x24"	62"	145
132	Portland	612	1891	18x24"	66"	132
133	Portland	613	1891	18x24"	66"	133

R.

ures

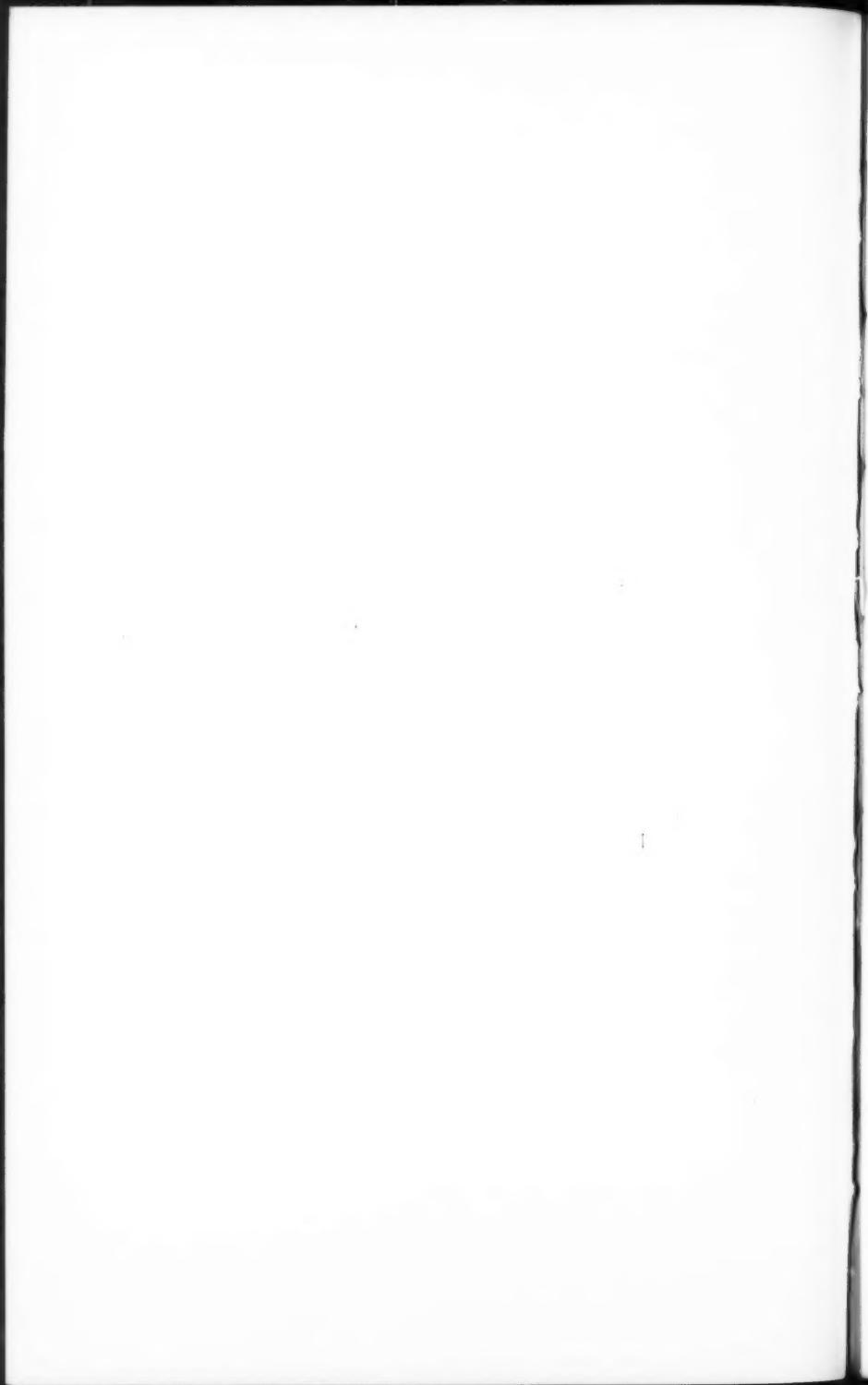
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Me. C. #2470. Class C. Schenectady, 1924. A new engine enters service at Waterville, Me.



—Courtesy of C. F. H. Allen.
Me. C. #522. Class W. Schenectady, 1913.



134	Schenectady	3471	1891	18x24"	66"	134
135	Schenectady	3472	1891	18x24"	66"	135
136	Portland	619	1891	18x24"	66"	142
137	Portland	610	1893	18x24"	62"	P&RF #5
138	Baldwin	14489	1895	18x24"	62"	P&RF #9
139	Vacant					

All of the above Class H engines have been scrapped.

Class H (Con.)

140-144	Manchester	4-4-0	16x24"	69"	126400#	
145-149	Manchester	38704-38708	1905			Nos. 141, 144 & 147 are
150-152	Schenectady	41216-41220	1907			still in service
		46034-46036	1909			

Class K-0-6-0

153	Schenectady	4222	1894	18x24"	51"	Ex 6-172-181
154	Schenectady	5566	1900	18x24"	51"	85-176-185
155	Manchester	26348	1902	18x24"	51"	182
156	Rhode Island	2714	1892	18x24"	51"	72-174-184
157	Schenectady	4223	1894	18x24"	51"	16-173-183
158	Schenectady	4221	1894	18x24"	51"	1-171-180
159	Schenectady	4164	1893	18x24"	51"	152-179
160	Rhode Island	2715	1892	18x24"	51"	102-177
161-162	Portland	537-538	1885	2-6-0	19x26"	54" Ex 113-114
						#161 Sc. 1909, #162 Sc. 1910
162	Baldwin	14488	1895	2-6-2	16x24"	38" Ex P&RF 53 Re 103
161-162	Schenectady	46398-46399	1909	20x26"	51"	
163-164	Schenectady	49201-49202	1910	20x26"	51"	
165-166	Schenectady	49203-49204	1910	20x26"	51"	Sold P. T. Co. 821-822
165-166	Schenectady	50844-50845	1912	20x26"	51"	
167-168	Schenectady	55553-55554	1916	21x28"	51"	
169-170	Schenectady	56500-56501	1917	21x28"	51"	
1st 171-174	Renumbered	180-181,	183-184			
1st 175	Schenectady	5565	1900	18x24"	51"	Sold P. T. Co. 803
1st 176	Renumbered	185				
1st 177	Renumbered	160				
1st 178	Schenectady	4163	1893	18x24"	51"	Ex 103 Sc 1917
1st 179	Schenectady	4164	1894	18x24"	51"	152 Re 152
171-172	Schenectady	57883-57884	1918	21x28"	51"	
173-174	Schenectady	59865-59866	1918	18x24"	51"	
175-176	Cooke	61373-61374	1919	21x28"	51"	
177-180	Schenectady	62047-62050	1920	21x28"	51"	
180-181	Manchester	26346-26347	1902	18x24"	51"	Sold P. T. Co. 801-802
2nd 181	Renumbered	153				
1st 182	Renumbered	155				
183-184	Brooks	30327-30328	1904	19x24"	51"	Sold P. T. Co. 807-808
2nd 183	Renumbered	157				
2nd 184	Renumbered	156				
185-187	Manchester	40580-40582	1906	19x24"	51"	Sold P. T. Co. 809-811
2nd 185	Renumbered	154				
188	Manchester	37710	1905	19x26"	51"	Ex P. & R. F. #31
189	Brooks	3234	1899	17x24"	50"	W. C. #11
2nd 189	Cooke	65747	1924	18x24"	51"	Ex Cumberland Mills Co.

The older Class K engines Nos. 171-180 were renumbered in 1917 from 180-189 and in 1920 again renumbered from 153-160. Nos. 161-180 and 2nd 189 still active, all others have been scrapped.

190 Vacant

Class L—4-4-0—19x24"

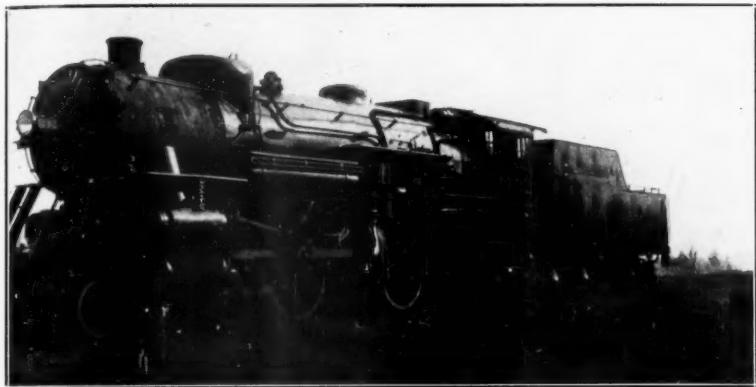
191-192	Schenectady	4119-4120	1893	19x24"	69"	Ex	5 & 10	Sc	1922 & 1928
193	Schenectady	4224	1894	19x24"	69"		77		1929
194	Schenectady	4121	1893	19x24"	69"		80		1929
195	Schenectady	4225	1894	19x24"	69"		81		1935
196	Schenectady	4226	1894	19x24"	69"		84		1928
197	Schenectady	4122	1893	19x24"	69"		143		1929
198	Schenectady	4123	1893	19x24"	69"		150		Active
199	Schenectady	4124	1893	19x24"	69"		151		1929
200-201	Schenectady	4227-4228	1894	19x24"	69"		156-157		Active
202-220	Vacant								

Class M—2-6-0—19x26"

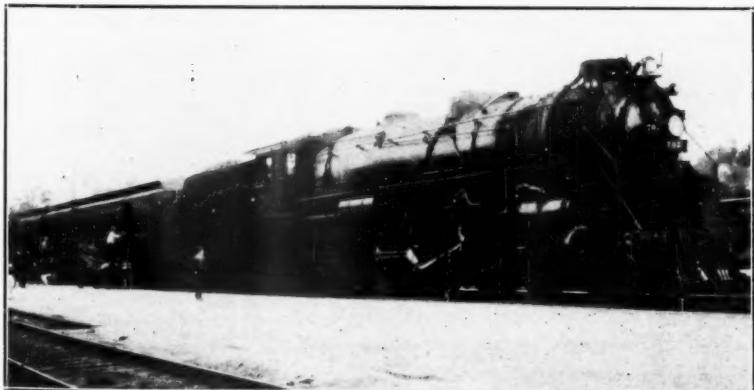
221	Schenectady	4211	1894	19x26"	63"	Ex	17	Sc	1923
222	Schenectady	3996	1893	19x26"	56"		19		1922
223	Schenectady	4212	1894	19x26"	63"		20		1921
224	Rhode Island	2778	1892	19x26"	63"		31		1921
225	Rhode Island	2779	1892	19x26"	63"		32		1921
226	Schenectady	4213	1894	19x26"	63"		36		1921
227	Schenectady	4214	1894	19x26"	63"		48		1921
228	Schenectady	4215	1894	19x26"	63"		51		1921
229	Schenectady	4216	1894	19x26"	63"		53		1921
230	Schenectady	4217	1894	19x26"	63"		65		1921
231	Schenectady	3997	1893	19x26"	56"		71		1919
232	Schenectady	4218	1894	19x26"	63"		76		1921
233	Schenectady	4207	1894	19x26"	63"		110		1921
234	Portland	604	1890	19x26"	66"		121		1920
235	Portland	605	1890	19x26"	66"		122		1920
236	Portland	606	1890	19x26"	66"		123		1920
237	Portland	607	1890	19x26"	66"		124		1927
238	Rhode Island	2613	1891	19x26"	54"		136		1920
239	Rhode Island	2614	1891	19x26"	54"		137		1920
240	Rhode Island	2615	1891	19x26"	54"		138		1919
241	Rhode Island	2616	1891	19x26"	54"		139		1920
242	Schenectady	3998	1893	19x26"	63"		144		1921
243	Schenectady	4208	1894	19x26"	63"		153		1921
244	Schenectady	4209	1894	19x26"	63"		154		1923
245	Schenectady	4210	1894	19x26"	63"		155		1923
246	Schenectady	4520	1897	19x26"	57"	P&RF #10	Active		
247	Schenectady	4521	1897	19x26"	57"	#11	Active		
248	Schenectady	4623	1897	19x26"	57"	#12	1938		
249	Baldwin	15480	1897	19x26"	57"	#54	Active		
250-270	Vacant								

Class N—4-6-0

271	Rhode Island	2763	1892	19x24"	54"	Ex	49	Sc	1921
272	Rhode Island	2764	1892	19x24"	54"		140		1921
273	Rhode Island	2728	1892	19x24"	54"		148		1921
274	Rhode Island	2729	1892	19x24"	54"		149		1921
275	Schenectady	4965	1899	19x24"	69"		37		1924
276	Schenectady	4966	1899	19x24"	69"		50		1925
277	Schenectady	5359	1899	19x24"	69"		56		1924
278	Schenectady	5360	1899	19x24"	69"		64		1926
279-281	Schenectady	6066-6068	1901	19x24"	69"	Sc	1928-1929		
282-283	Schenectady	27660-27661	1903	19x24"	69"		1935		
284-285	Schenectady	29723-29724	1904	19x26"	73"		1935&1938		
286-287	Schenectady	30450-30451	1905	19x26"	73"		1937&1935		
288-289	Schenectady	40081-40082	1906	19x26"	73"		1938&1937		
290-301	Vacant								
290-300	Vacant								



Me. C. #632. Class S. Schenectady, 1924. A new engine arrives from the builders
at Waterville, Me.



Me. C. #2702. Class D. Baldwin, 1931 at Brunswick, Me.

Class P—2-6-0—19x26"—63"—136000

301	Schenectady	4471	1896		Ex	158	Sc	1923
302	Schenectady	4472	1896			159		1921
303	Schenectady	4473	1896			160		1921
304	Schenectady	4474	1896			161		1923
305	Schenectady	4475	1896			162		1921
306	Schenectady	5151	1899			163		1925
307	Schenectady	5152	1899			164		1924
308	Schenectady	5153	1899			165		1927
309	Schenectady	5154	1899			166		1927
310-311	Schenectady	5567- 5568	1900		Sc	1925&1927		
312-315	Schenectady	5674- 5677	1900			1926-1928		
316-319	Manchester	25442-25445	1902			1930-1935		
320-321	Manchester	26307-26308	1902		Ex	P&RF	13-14	Active
322-350	Vacant							

Class O—4-6-0

351-353	Schenectady	27657-27659	1903	21x26"	63"	351	Sc	1931-1937
354-355	Schenectady	29029-29030	1903	21x26"	63"	Sc	1937	
356-359	Schenectady	30323-30326	1904	21x26"	63"	Sc	1937	#359 Active
360-363	Schenectady	38170-38173	1906	21x26"	63"	Active	#360	Sc 1938
364-367	Rhode Is.	40576-40579	1907	21x26"	63"	Active	#364	Sc 1938
368-372	Rhode Is.	41235-41239	1907	21x26"	63"	Active		
373-374	Baldwin	32267-32268	1908	21x26"	63"	Active		
375-376	Baldwin	32304,32344	1908	21x26"	63"	Active	#375	Sc 1938
377-378	Baldwin	32395,32428	1908	21x26"	63"	Active	#377	Sc 1938
379-380	Baldwin	32566,32575	1908	21x26"	63"	Active		
381-382	Baldwin	32644,32675	1908	21x26"	63"	Active		
383-390	Lima	6482- 6489	1923	20x28"	63"	Active		
391-400	Vacant							
401-408	Schenectady	59050-59057	1918	22x28"	66"	Active		
409-412	Schenectady	62051-62054	1920	22x28"	66"	Active		
413-449	Vacant							

Class C—4-6-2

450-451	Schenectady	42439-42440	1907	22x28"	73"	Sc	1937	
452-454	Schenectady	46036-46038	1909	22x28"	73"	Active		
455	Schenectady	47731	1910	22x28"	73"	Active		
456-457	Schenectady	49205-49206	1911	22x28"	73"	Active		
458-459	Schenectady	50940-50941	1912	22x28"	73"	Active		
460-461	Schenectady	52985-52986	1913	22x28"	73"	Active		
462	Schenectady	53291	1913	22x28"	73"	Active		
463-465	Schenectady	54568-54570	1914	22x28"	73"	Active		
466-468	Schenectady	57885-57887	1917	25x28"	73"	Active		
469-470	Schenectady	65537-65538	1924	25x28"	73"	Active		
471-500	Vacant							

Class W—2-8-0

501-505	Schenectady	47732-47736	1910	22x28"	63"	Active	503-505	Sc 1937
506-509	Schenectady	49207-49210	1910	22x28"	63"	Active	506-508	Sc 1937
510-516	Schenectady	50933-50939	1912	23x28"	63"	Active	511	Sc 1939
517-524	Schenectady	52989-52996	1913	23x28"	63"	Active		
525-528	Schenectady	54564-54567	1914	23x28"	63"	Active		
529-600	Vacant							

Class S—2-8-2

601-603	Schenectady	54571-54573	1914	26½x30"	63"	Active
604-610	Schenectady	55020-55026	1915	26½x30"	63"	Active 605 Sc 1937
611-616	Schenectady	56502-56507	1916	26½x30"	63"	Active 614-615 Sc 1937&1936
617-620	Schenectady	57879-57882	1918	26½x30"	63"	Active 619-620 Sc 1937
621-626	Schenectady	60933-60938	1919	26x30"	63"	Active
627-632	Schenectady	65539-65544	1924	26½x30"	63"	Active
633-650	Vacant					

Class A—2-10-2—29x32"—61"—360000

651-654	Schenectady		1920		Ex B&M. 3000,3008,3017,3009
654-700	Vacant				

Class D—4-6-4

701-702	Baldwin	61370-61371	1931	23x28"	73"	Active
703-1200	Vacant					

Class X—2-6-6-2—22&35x30"—63"—308000

1201	Schenectady	48648	1910		Ex B. & M. 3000	Sc 1929
1202	Schenectady	48650	1910		3002	1929
1203	Schenectady	48649	1910		3001	1935
1204	Schenectady	48651	1910		3003	1929

PORTLAND TERMINAL CO.

The terminal facilities at Portland, Maine are operated by the Portland Terminal Co., controlled by both the Boston & Maine and Maine Central roads. The equipment, mostly switchers, came from both roads and was as follows:

801-802	Manchester	26346-26347	1902	18x24"	51"	Ex MC	180-181	Sc 1923-4
803	Schenectady	5565	1900	18x24"	51"		175	1929
804	Manchester	1712	1899	18x24"	51"	B&M	161	1929
805	Baldwin	21454	1903	18x24"	51"	B&M	192	1928
806	Baldwin	21515	1903	18x24"	51"	B&M	194	1929
807-808	Brooks	30327-30328	1904	19x24"	51"	MC	183-184	1939&6
809-811	Manchester	40580-40582	1906	19x24"	51"	MC	185-187	1936&9
812-819	Vacant							
820	Manchester	46340	1909	19x26"	51"	B&M	288	1936
821-822	Schenectady	49203-49204	1910	20x26"	51"	Ex MC	165-166	Active
823-827	Manchester	50736-50740	1912	20x26"	51"	Active		
828-829	Schenectady	52987-52988	1913	20x26"	51"	Active		
830-831	Schenectady	57579-57580	1917	21x28"	51"	Active		
832-833	Schenectady	59867-59868	1918	21x28"	51"	Active		
834-835	Schenectady	62202-62203	1920	21x28"	51"	Active		

All of the above were of the 0-6-0 type and Nos. 807-808 were "Mother Hubbards" with wide fireboxes and it is reported they originally burned hard coal.

1st 850	Portland	545	1887		Ex MC #29
2nd 850	Rhode Island	1546	1885		Ex MC Nos. 21-55
851-852	Schenectady	56566-56567	1916		Ex B&M 600-601 0-8-0
					25x30" 58"
1001-1003	Schenectady	68730-68733	1936		Diesel Electric
1004	Schenectady	69071	1938		Diesel Electric

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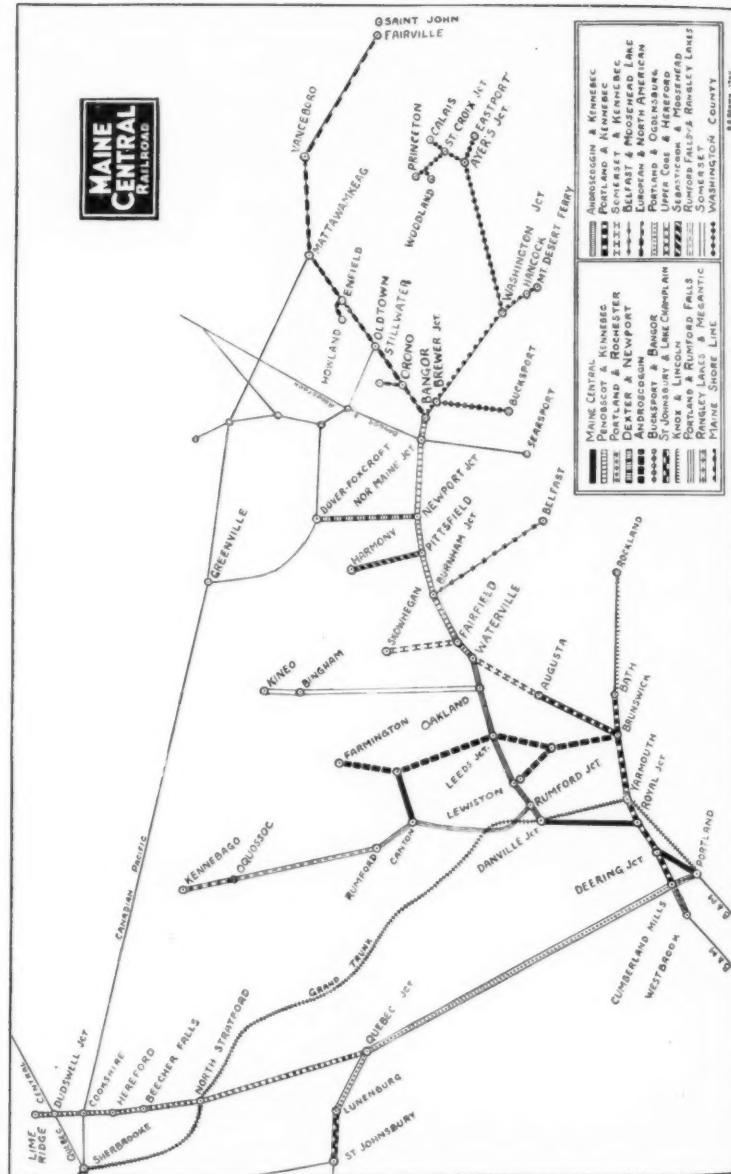
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This concludes the Maine Central R. R. locomotive roster. In closing, it will be noted that the locomotives were ordered in small lots but ordered quite frequently. The policy of the road was to appropriate certain sums of money each year with which the Mechanical Department was to purchase new power, new machinery for the repair shops at Waterville or Thompson's Point or to modernize the present motive power. It was money well spent and for a number of years the cost of repairs per locomotive mile was lower on this road than any other road in New England.

Between Portland and Waterville the road has practically two separate routes. In addition to providing each route with passenger service, freight trains are scheduled so as not to interfere with the prompt movement of both classes of trains over either route. With several of their passenger trains running in sections in the rush seasons, the Class C engines were kept pretty much on the jump. Two of our most interesting New England railroads are located in the State of Maine and we are glad to be able to present their locomotive rosters.

The author wishes to acknowledge the help and assistance received from both the American Locomotive Co. and the Baldwin Locomotive Works, also that from Mr. D. C. Douglass, Executive Vice President of the Maine Central and lastly from our Assistant Secretary, Mr. Harold S. Walker for his research and arranging the Portland & Rumford Falls roster.

The John C. Pratt

By LAWRENCE DOHERTY

Locomotives of the '50's were not standardized as they are today, in fact, each engine was more or less a "tailored job," built more to the whim of the Master Mechanic than to a definite set of specifications. Along with this was the desire on the part of some of the builders to produce something flashy and ornate. Some have charged that efficiency was subordinated to looks. These trends tended to produce a locomotive of lavish design plus a surprising degree of efficiency.

There were two locomotives that carried this name on the Ogdensburg road. In April, 1851, the Amoskeag Manufacturing Co. of Manchester, N. H., delivered their 16th locomotive to the Northern (N. Y.) R. R., under the name "Sorel." As built, she was of the 4-4-0 type, 16x20" cylinders, 72" drivers and weighed about 25 tons. In the early seventies, this engine was rebuilt in the Malone Shops and she was not scrapped until some time between Jan. 1, 1891 and June 27th, 1892. At the time of her rebuilding, she was probably renamed "J. C. Pratt," at any rate she carried this name in 1874.

The "John C. Pratt," illustrated herewith, was a product of the Taunton Locomotive Works, Taunton, Mass., built in April, 1868, their 431st locomotive, with 16x24" cylinders, 60" drivers, weight 62500 lbs. Some time between June 27, 1892 and May 31, 1895, she was scrapped and, in the meantime, she had been renamed "H. A. Church."

The gentleman for whom the engine was named was one of the Directors and, in 1865 was elected to the presidency of the road. After a breaking-in period, the engine was assigned Train #3, the "Ogdensburg Express," under the capable guidance of engineer Hiram Weeks. She was a handsome engine and she was improved with each shopping. Every detail of her appearance has been described to me by the men who worked on her, until I almost know her by heart.

The cow-catcher was oak, polished and waxed to a high lustre as were all the wooden parts of the pilot assembly. The drawbar, as you will note from the accompanying picture, laid on the cow-catcher and was grained to resemble the oak of the wooden parts on front. From the pilot beam to the boiler ran two brass rods. These rods were complementary to two brass flag staff holders on the pilot beam, which contained, when the flags were not in place, two brass staffs, atop each of which was a brass ball eight or ten inches in diameter. On the top of these balls rested an American Eagle whose wing spread has been estimated from twelve to eighteen inches.

The big oil headlight had hand painted inserts thru which the light shone at night. The body of the light was polished black iron with gold leaf trim, while the platform on which the light rested, was delicately scrolled brass work brackets. The brass number plate rested on the black iron boiler front cover, which cover, incidentally, was fluted

to resemble spokes radiating from the center of a wheel. The boiler itself was covered with polished black iron, held in place with brass straps. The stack, of black iron, was trimmed at the joints with brass rolls. The original bell was replaced by one made in the brass shop at Malone and carried on its top a smaller reproduction of the brass eagles on the flag staffs referred to previously. The sand dome was black iron covered with gold leaf decoration, while the sand pipe, hand rails, edging along the boiler walk, etc., was brass.

By now, you may be getting a bit tired of the word brass, but I assure you, you are much less fatigued than were the men who, after a run, were required to polish all this material, as well as the iron work, wood, etc., before they went home to rest, regardless of how many hours they had been on the road. While we are on this phase of the subject—you are aware of the tendency of a person to rub his hand over a polished surface. Well, the patrons of the O. & L. C. were no exception. You also know that to rub a hand over polish brass will tarnish the surface almost instantly. To avoid this, the engineer "Old Hiram" as he was known, invariably got off the engine and stood guard alongside, ready "to take the head off" any unsuspecting patron who might carelessly attempt to rub a hand over the polished brass cylinders or other trim. From all accounts, "Old Hiram" was diminutive in stature only, being capable of towering rage at the mere thought of alien hands on his pet engine.

As I have said, the cylinders, steam box, oil cups and valve motion, insofar as possible were brass, as was the injector pump, pump control rod, etc. The injector pump, located just ahead of the main driver, and looking like a string of three brass sausages held vertically, operated only when the engine ran. Old timers tell about jacking the engine up and running the drivers to pump water into the boiler when they were stuck in snow banks in winter!

The guides and driving rods were highly polished, the rods having been gouged out by some ambitious machinist and mahogany inserts placed in the grooves. The wheels were banded by brass strips while the mud guards had brass edges on them. Between the drivers on the side of the outside firebox wall you will note the manufacturer's name plate. Incidentally, the outside of the firebox wall was covered with sheet iron, painted black at regular intervals, in fact, about as often as the paint became blistered or discolored from the interior heat. At one time I am told, some shop's woodworker made a set of black cherry cover plates for the pilot wheels, though I cannot say if they were ever used.

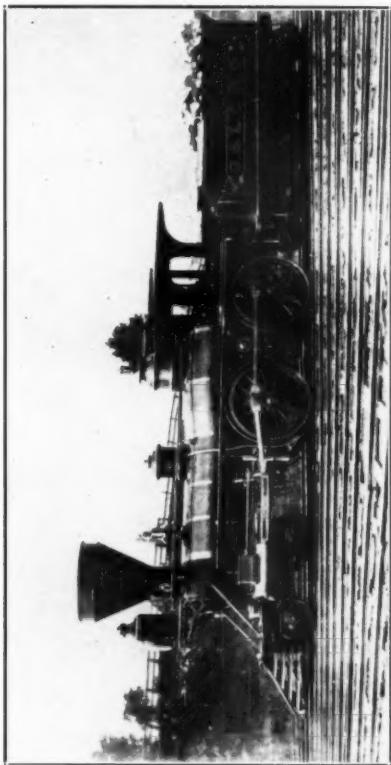
The cab was wooden, oak, I think. The exterior was varnished and rubbed to a soft sheen, while the cab roof was painted a soft grey. The "John C. Pratt" was in gold leaf, as were the many fine striping lines on the cab. The interior was painted white with bright green trim on the sash and seat boxes. A reed mat covered the floor and deck. The throttle, valves, gauges, handrails, etc., were a glistening maze of polished brass.

The tender was equally ornate and matched in detail the engine with the brass handrails, fine gold striping and lettering, fancy round corners, polished wooden sills, brass buggy style steps and all. I am told that "Old Hiram" carried a heavy carpet to lay over the side of the tender when taking on wood to insure that the sides would not be scratched in the process.

During her long period of service she was involved in only one serious accident at which time she was sideswiped by the "Frost," O. & L. C. #2, originally the "George M. Barnard," also a Taunton locomotive, built in 1869 in the Malone yard. Her last trip was from Malone to Ogdensburg, that is, her last trip as a wood burner. On that trip she ran on the Mail #13, in charge of engineer Minerd Smith, and she was fired by an uncle of mine, Henry Conant. I have been told that her last work was on the work train which built the "Salmon River Short Line" as we call trackage from Malone Yard to the Malone Paper Company plant north of town. For a number of years after the death of engineer Weeks, the "Pratt" was run by James Collopy and fired by Joseph Bruegon who, at this writing still lives in Malone and who retains the old turned brass gauge light and hand made oiler used on the Pratt, as valued souvenirs.

The picture which accompanies the text is a copy of an original in my collection. I do not know when the picture was taken, but from the lack of many of the earlier embellishments which she is known to have carried, I would judge the time to have been slightly before her conversion and rebuilding. In the original picture there are several objectionable features, one of which is a tree apparently growing out of the tender, which, you will note, has been removed in the accompanying photo.

The way in which this picture came into my ownership is, I feel, interesting enough to tell here, if only to prove that one never knows when a valuable addition to a railroad hobbyist's collection may appear, or from what source. As a small, (and undoubtedly spoiled) child, I developed a great fascination for pictures of trains and engines. Naturally, my patient parents kept an eye out for such pictures. My Dad, while on the way home one day, passed the scene of an auction sale of articles of household furniture, and, luckily, noted, in the hand of the auctioneer, a picture of a locomotive. Dad bought the picture and brought it for me to look at, being careful to remove the glass. Now, surprisingly enough, even as a child, I treasured that picture, and, even though I looked at it for hours, perhaps, I still had it in perfect condition when I finally became old enough to realize the prize I had so long possessed. With no thought in mind as to where my activities were to lead me, I began inquiry from old railroad men about the locomotive whose picture I possessed. As my stock of information slowly grew greater, I naturally picked up some data about the O. & L. C. itself, and from there on into railroad history as a hobby is, as you all know, but a step, which fact, incidentally, is another of the reasons why I have requested the opportunity of telling about the Pratt.



The "John C. Pratt" of the O. & L. C. R. R.

Without doubt, it is fitting and proper that we should here pay a bit of tribute to the man after whom the engine was named, that he too, may be better remembered.

When the highly determined, but financially inadequate citizens of Northern New York State agreed that a railroad was vitally necessary to the progress of their section, an appeal was made to many financial interests for help. I regret that sectional ambitions within New York State, not only refused financial aid, but, in fact, expended sums in lobbying to prevent the acquisition of a charter for the projected railroad, fearing that such a railroad from the St. Lawrence River to Lake Champlain would divert traffic and buying from the New York City area. Northern New Yorkers then turned to the next most important money market in the country, Boston. One of the first to lend substantial aid to the then dubious enterprise, was Mr. John C. Pratt of Boston. After completion of the Northern New York Railroad Mr. Pratt served on the Board of Directors, and, on July 11th, 1865 he was elected President of the road, the duties of which office he handled very capably.

The Northern New York Railroad, at the time of its building, was one of the most potent factors in the development of our great west, connecting the Eastern Seaboard, via connecting routes, with the Great Lakes region and the West. To Mr. John C. Pratt, who loaned a helping hand to this project to bind more closely our Nation, and to the little O. & L. C. locomotive "John C. Pratt," who, chugging along with the cargoes of that Nation, her part, small though it may have been, we are, and justly should be, rememberingly grateful.

Worth Reading

Compiled by

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BOOKS AND PAMPHLETS

9 *A Century of Reading Company Motive Power, 1832-1941*, by Reading Company, Philadelphia, Pa., 108 pp. illustrated. Published by the Company, \$1.25.

9 *The Civil War Career of Thomas A. Scott*, by Samuel Richey Kamm, vi, 208 pp., Philadelphia, Pa., University of Pennsylvania, but copies available from author, Wheaton College, Wheaton, Ill. \$2.00. Why the vice president of the Pennsylvania Railroad "was the War Department" in 1861, and how he kept the war going, are related in interesting detail in this book, and touched on in *Reveille in Washington, 1860-1865*, also listed.

9 *Cost of Railroad Transportation—A Bibliographical Memorandum of Some of the Reports and Discussions of This Subject. May 31, 1941*, by Bureau of Railway Economics Library, Association of American Railroads, Washington, D. C. 148 mimeo. 1. Available on request to BRE Library. Lists, with quotations, reports and discussions from those of Albert Fink and Octave Chanute in the 1870s to the latest Interstate Commerce Commission's at the time of compilation. Foreword states: "No attempt has been made to list the reports, studies and discussions of railroad organizations, such as the American Railway Engineering Association or the Railway Accounting Officers Association, to mention only two, as this would require an additional memorandum as long as this one." p. 2.

9 *The Day of Two Noons*, by Carlton J. Corliss. 15 pp. Available on request to Public Section, Association of American Railroads, Washington, D. C. ". . . This remarkable phenomenon occurred on Sunday, November 18, 1883. It was the day on which Standard Time, sponsored by the railroads, was adopted throughout the United States and in many parts of Canada. . ." p. 3.

9 *Directory—Army & Navy Posts, Bases, Stations: Location, Post Office, Express Office, Telegraph Office, Railroad Stations*, issued by A. F. Cleveland, vice president, Traffic Association of American Railroads, August 15, 1941. 126 pp. For sale by Traffic Dept., Association of American Railroads, Washington, D. C. 25 cents per copy. "This price includes the cost of supplements." Besides the obvious practical use of this Directory and its forthcoming supplements, presenting changes, and the like, another use is for excursions into current geography of the United States for students of all ages.

Earthquake Reconstruction on Quetta (Railway) Division, 1936-1940, by R. O. C. Thompson, executive engineer, Reconstruction, North Western Railway (India). 64 pp. Illustrations, Plates. Issued as Technical Paper No. 307, Railway Board, India, and available from Manager of Publications, Delhi, India. 1 shilling, 3 pence. Mr. Thompson was given the O. B. E. in the New Year's honors list. A sketch of his career is in Railway Gazette, London, England, August 22, 1941, p. 195.

National Association of Shippers Advisory Boards. Proceedings, First Interim Meeting, Chicago, June 19, 1941. 56 pp. Available from Mr. Carl Giesow, national secretary of the association, Chamber of Commerce, St. Louis, Mo. ". . . We are gathered at a critical time—and this crisis is the reason for this special meeting . . . , the object of the meeting being to further the National Defense program by surveying the transportation needs for the last half of the year, and to give further impetus to cooperative means of meeting the rapidly increasing transportation demand for that period, and for the future . . . It is not unlikely the peak loading may possibly reach 1,000,000 cars weekly by fall . . ." In President Alvin W. Vogtle's remarks, p. 2.

A Pathfinder in the Southwest; The Itinerary of Lieutenant A. W. Whipple During His Explorations for a Railway Route from Fort Smith to Los Angeles in the Years 1853 & 1854, edited and annotated by Grant Foreman. xv, 298 pp. Illustrations. Folded map. (American exploration and travel series) Norman, Okla., University of Oklahoma Press. \$3.00. Bibliography, pp. 281-286.

Railroads and Defense—A Two-Year Record—The Situation Today—The Job Ahead, by Association of American Railroads. 13 pp. Issued August 1941. Available on request to Association of American Railroads, Washington, D. C.

Railway Statistical Terms—A Collection of Definitions of Words and Phrases Frequently Used in Discussions of Railway Statistics, by Bureau of Statistics, Interstate Commerce Commission. Its Statement No. 4119, June 1941. (2), 58 pp. Available on request to the Bureau of Statistics. I. C. C., Washington, D. C. "Selected References" pp. 56-58. ". . . A tentative draft . . . was considered in detail by the Committee on Statistics of the Accounting Division of the Association of American Railroads and most of the changes suggested have been adopted." p. (2).

Reveille in Washington, 1860-1865, by Margaret Leech. 483 pp. Illustrations. Maps, including end-paper maps of City of Washington, 1861, and railroad map showing railroads from Annapolis and Baltimore, p. 56. A short-cut to railroad events is to consult Index under Aquia Creek, Baltimore & Ohio RR., Orange & Alexandria RR., Pacific Railroad bill, Pennsylvania RR., as well as Carnegie, Andrew, and Scott, Thomas A.

Technical Manuals, Military Railway Service, 1940-1941, prepared under the direction of The Chief of Engineers, U. S. War Department. Published by U. S. Government Printing Office, Washington, D. C.

TM 5-400. Military Railways and Inland Waterways.	10 cents.
TM 5-405. Railway Operating Battalion.	10 cents.
TM 5-410. Railway Shop Battalion.	10 cents.
TM 5-415. Military Railway Service Operating Manual. 2 Chapters issued to date. Price not yet available.	
TM 10-370. Rail Transportation, Zone of the Interior.	20 cents.

Through Fifty Years with the Brotherhood Railway Carmen of America, by Leonard Painter. xi, 228 pp. Illustrated. Published by Brotherhood Railway Carmen of America, Kansas City, Mo. Cover and back title: History, Brotherhood Railway Carmen of America. Foreword by Felix H. Knight, general president of the brotherhood, p. v, reads: ". . . Such a history could have been written by a member of this Brotherhood, but such a member might, because of his zeal and loyalty to the union, be unable to view the organization impartially and scientifically. Fortunately the services of a writer of wide experience, Leonard Painter, were available, . . . We made available to him all the records at headquarters, . . . The conclusions contained herein were dictated to him by factual records as he saw them. For these conclusions, the author . . . is solely responsible . . ."

Transportation Reports for Defense, prepared by Nation's Business, Washington, D. C. pp. 17-39, Reprinted from Nation's Business, September 1941. Illustrated.

ARTICLES IN PERIODICALS

American Railway Speed in 1940, by Cecil J. Allen. *Railway Gazette*, June 13, 1941, pp. 648-650. Tables include: The Fastest Start-to-Stop Runs in the United States, Summer, 1940, p. 649.

Check List of Publications on American Railroads before 1841.
Part II, compiled by Thomas Richard Thomson. Bulletin of the New York Public Library, July 1941, pp. 533-584. Lists publications from 1834-1836.

Freight Progress Number, Railway Age, May 24, 1941. Its Vol. 110, No. 21, pp. 873-968, including Illustrations and Tables. Covers and 244 advertising pp., illustrated partly in color, follow theme of this number, the whole making a useful reference work, and a number to be suggested to teachers of "transportation units." New York, Simmons-Boardman Publishing Corporation, \$1.00.

Iniciativa do Estados nas Construcoes Ferroviarias. Revista das Estradas de Ferro, Rio de Janeiro, Brazil, July 15, 1941, pp. 2996-2997. Brief histories of railroads constructed by governments of Argentina, Bolivia, Brazil, Chile, and Peru.

El IV Congreso Sudamericano de Ferrocarriles. [Proceedings at Bogotá, Colombia, February 7-17, 1941] (Boletín de la Asociación Internacional Permanente, Congreso Sudamericano de Ferrocarriles, Buenos Aires, Argentina, January-April, 1941) Editorial comment: Work of the Bogota Congress, in *Railway Gazette*, London, England, May 23, 1941, p. 566.

Railway Construction in the U. S. S. R.—A Note on the More Important Lines Built in Europe and Asia During the Last 23 Years, by Brian Reed. (*Railway Gazette*, London, England, August 1, 1941, pp. 107-112) Maps: *The European Railways of the U. S. S. R.*, pp. 108-109; *The Asiatic Railways . . .*, p. 110.

Railway Engineering & Maintenance 25th Anniversary Issue, June 1941. Its Vol. 27, No. 6, pp. 391-438. Illustrated. "A Quarter Century in Railroading Brings Many Changes in Maintenance and Construction," "... The Future?" (pp. 394-395, and 421). pp. 391-421.

The "Railways" of Ancient Greece. *Railway Gazette*, London, England, April 4, 1941, p. 384.

Transport Services and the War—*Railway Gazette*, London, England. A weekly feature since September 1939, reviewing developments in all parts of the world. Illustrations, Maps, Reproductions. No. 103, in *Railway Gazette*, August 22, 1941, pp. 197-199, includes: Civilian air raid casualties during July—*The Railways of Soviet Russia*—*Railway Developments in Germany and Occupied Territories*—*Trans-Canada Air Lines in Wartime*—Recent Political Changes [in Continental Europe, Rhodesia and Newfoundland.]

Transportation Problems in Free China, by Maurice Liu. *Pacific Railway Club Proceedings*, February 1941, pp. 7-9. A useful supplement to the data in this paper is *The Railways of Free China*, in *Transport Services and the War*—No. 101, p. 147 in *Railway Gazette*, London, England, August 8, 1941. With both as background, the "Burma Road," "Burma Railway" developments in current daily newspapers will be more interesting.

New Books

"FARES, PLEASE," by John Anderson Miller, 204 pages, 9 $\frac{1}{4}$ x 6, illustrated. Bound in cloth. Published by D. Appleton-Century Co., 35 West 32nd St., New York, N. Y. Price \$3.50.

Many of our members may feel that the "juice propelled" vehicles have but little of interest in the way of history. After reading this book, I think you will feel differently. The author, Mr. Miller, was successively assistant editor, managing editor and editor of the "Electric Railway Journal," now the "Transit Journal." In this capacity he is able to view the situation broadly, not through local eyes.

The book treats of the birth of street transportation in the horse drawn omnibus and we are carried through the changes to the horse car, the cable car, the electric railway, the elevated railway, the subway, the motor-bus to the present and latest type of vehicle used in street transportation.

The greater part of this is well within the memory of most of us who have passed the half century mark and many of the facts and illustrations recall dormant memories. Mr. Miller deserves to be commended for his efforts as his book covers a field that heretofore but very little has appeared in book form.

"A CENTURY OF READING COMPANY MOTIVE POWER," 108 pages, 6 $\frac{3}{4}$ x 9 $\frac{3}{4}$, 139 illustrations. Bound in paper. Copies may be obtained from The Publicity Department, Reading Company, Reading Terminal, Philadelphia, Pennsylvania. Price \$1.25.

Here we have an illustrated history of the motive power of this road. Commencing with Matthias W. Baldwin's "Old Ironsides" we are carried through the early stages of the "Gowan & Marx," the work of Lewis Kirk, Ross Winans, James Millholland and John E. Wootten to the present day "Crusader."

The story is chiefly told by the illustrations but there is enough detailed history, both of the motive power and locomotive specifications, to make this work extremely valuable to the "locomotive fan." The Reading Company deserves a great deal of credit for publishing this little work and we wish more roads would follow their example. The small sum asked is well worth the price of this history and now will be the time to procure a copy before the supply is exhausted.

"A PATHFINDER IN THE SOUTHWEST," edited by Grant Foreman, 298 pages, 9x6, illustrated. Bound in cloth. Published by the University of Oklahoma Press, Norman, Oklahoma. Price \$3.00.

Visit any library specializing in Transportation and the visitor will probably be astounded at the number of documents that have been printed covering the different routes for the proposed Pacific Railroad. Past events caused a curious twist in their construction that made the easier route of later completion.

Go back to the forties with the trade to the southwest, the Mexican War, the discovery of gold in California, all this and more made the construction of a Pacific R. R. imperative. Congress had been memorialized on the subject, Senator Benton was vociferous in his support of it and in 1851 the State of Missouri issued bonds for the construction of a railroad.

In March, 1853, Congress authorized surveys for the best route and appropriated money for same. Under Jefferson Davis, then Secretary of War, three surveys were planned; one along the forty-fifth parallel, another near the thirty-eighth and thirty-ninth and the third following the Missouri and Columbia Rivers. Davis favored the more southerly route.

Lieutenant A. W. Whipple of the Topographical Engineers, in command of an expedition of about seventy men was ordered to find the best route between Arkansas and Los Angeles, near the thirty-fifth parallel. The route lay through what is now Oklahoma, along the Canadian River. They discovered the grade to be uniformly easy with no tunnels and few bridges to be built; timber and stone and grazing for stock plentiful. Texas and eastern New Mexico offered slight obstacles. From Santa Fe the party proceeded to Albuquerque and on westward to the San Francisco Mountains. From Flagstaff, Arizona to the Colorado was encountered a difficult descent but the thoroughness to Lt. Whipple's explorations is found in the construction of the Atlantic & Pacific R. R., now the A. T. & S. Fe over this route. Lt. Whipple and his party were in the field nearly a year and although some equipment had to be abandoned, the entire force returned intact.

Events decreed that Oklahoma was not to have a railroad until nearly a quarter of a century later—had this route been first selected, the history of our country might have been different. Lt. Whipple's style is clear and vigorous and the book makes a valuable addition to the history of transportation and exploration of the Southwest.

In Memory Of

WILLIAM A. HAZELBOOM

Life Member

26 Cliff St., Roxbury, Mass.

who died on March 24, 1941.

J. FRANK COOK

Honorary Member

256 Shelburne Road, Burlington, Vermont

who died on August 30, 1941

E. L. CLEUGH

54 Lower Baggot St.

Dublin, Irish Free State

who died on April 15, 1941

